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DETROIT

A National Newspaper for Every Branch of the Industry

Automotive Daily News

CARS · SHOP EQUIPMENT · TRUCKS · AVIATION · PARTS · ACCESSORIES · TIRES

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OVERLAND ADDS LOWEST PRICED KNIGHT 6

Few Cars Hold Same Rank In Retail Sales in 1930 That They Held in 1929

General Motors and Chrysler Units, Studebaker And Hupmobile Are Higher on Ladder Than Year Ago

NEW YORK, June 11.—With complete new car registrations returns in from all states for the first four months of the current year, it is now clear that, with the exception of Ford and Chevrolet, few cars will finish 1930 in the same relative positions in regard to sales that they held in 1929.

Ford and Chevrolet, of course, continue to hold first and second, respectively, but from there on down, the list only one car in the twenty leading sellers retained in the first four months of this year the same rank it held in the corresponding period of last year. That was Hudson, which kept its place as the thirteenth best selling car in the United States.

Buick remained firmly entrenched in third position, which it captured in the earlier months of this year, in contrast to its place at No. 6 position in the first four months of 1929. This step-up by Buick was one of the outstanding features of automobile sales in the first four months and it gave General Motors three out of the first four leading sellers. Perched on rung No. 4 is Pontiac, which a year ago was down in No. 5 position.

Two other General Motors' units improved their sales rank this year over last. Oldsmobile advancing from ninth to seventh place and Oakland going up from twentieth to eighteenth.

Aside from the gains made by the General Motors' units, the improvement in the positions of the Chrysler passenger cars was the feature of the four-months' sales.

Chrysler's four-passenger cars finished in the first dozen this year, while in the corresponding period of 1929 the best they could do was to place among the first fifteen. Dodge rests securely in sixth place this year, as against seventh a year ago, while Chrysler has moved up

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INSTALLMENT SALES LOSSES ARE SMALL

Special from A. D. N. Washington Bureau

Washington, June 11.—The second report covering the nation-wide credit survey undertaken by the Department of Commerce at the request of the National Retail Credit Association today disclosed the average losses on installment sales for automobile dealers to be only 0.3 per cent. and for automobile accessory stores 3.6 per cent.

Certain classes of retail trade have credit losses considerably above the general average for all lines, it was revealed, the automobile accessory dealers being almost in a similar position with electric appliance stores which had the highest average losses.

Reports from 569 automobile dealers with total net sales of $261,137,556 in the year covered by the survey indicate that 37.1 per cent. of this amount was for cash, 16 per cent. on open credit and 46.9 per cent. on installment credit.

In the automobile accessory field reports from 678 stores with total sales of $56,987,725 indicated that 53 per cent. of this amount was for cash, 44.5 per cent on open credit and 1.7 per cent. on installment credit.

It was explained that the figures covering automobile dealers did not show the proportion of cars sold on

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Car Exports In April Top March by 5%

Special from A. D. N. Washington Bureau

Washington, June 11.—Combined exports of passenger and commercial cars during April amounted to $23,039,616, as against $21,928,386 in the previous month and $17,749,210 in February, it was announced today by the automotive division of the Department of Commerce.

The total valuation of automotive products exported in April was $37,443,661, a decrease of $2,521,307, or 6.3 per cent., as compared with the March figures. However, this decline was entirely accounted for by the falling off in shipments of miscellaneous products.

During the past five years the average monthly value of automotive exports for the January-April period was as follows:—

1926, $31,542,039; 1927, $37,274,801; 1928, $41,187,234; 1929, $63,533,729, and 1930, $35,339,860.

In April Canada retained the position as leading market for American passenger cars, with Belgium, Argentina, Denmark and Sweden following in the order named. A substantial increase in demand was registered by both Germany and Japan with gains of 118 per cent. and 335 per cent. respectively over March.

Truck requirements of the eight leading markets were materially improved, with the exceptions of Australia and Sweden. Shipments to Denmark, Belgium and Argentina, the first three markets of importance in this classification, were greater than in March, as well as in comparison with April of last year.

The average passenger car and truck export valuation for the

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HAS NEW ENGINE AND BODY; LIST PRICE $975 TO $1,265

Increased Power, Improved Lubrication and Greater Over-All Length Are Features; Six Styles Are Offered

TOLEDO, June 11.—Model 87, a new Willys-Knight, featuring a newly designed sleeve-valve engine and a new line of bodies with the latest color combinations, was announced by the Willys-Overland Company today. This new car, which lists from $975 to $1,265, has never been exceeded in size or beauty by any low priced Willy-Knight.

The body models include a five-passenger coach, five-passenger standard sedan, four-passenger roadster, four-passenger coupe, five-passenger touring car and the de luxe sedan. All models have an over-all length of 159 inches except the de luxe sedan, which has a length of 161½ inches.

The new Willys-Knight six-cylinder sleeve valve engine embodies such advancements as larger port openings and new manifolding for increased power development; improved lubrication of the double sleeves, block and head rings; highly efficient cooling system and a simplified rectifier for cooler oiling.

The engine has a cylinder bore of 2 15-16 inches with a stroke of 4⅜ inches, a piston displacement of 177.9 cubic inches and develops 55 horse power at 3,000 r. p. m. The compression ratio is 5.88 to 1.

Lubrication has been taken care

(Continued on Page 2)

INTERNATIONAL TRUCK OFFERS 2 NEW MODELS

Chicago, June 11.—Two new heavy-duty trucks—the Model W-1, of two and one-half tons capacity and the Model W-3, of three and one-half ton capacity—are just announced by the International Harvester Company.

Both of the new vehicles follow the same style of design. Each is offered in any one of a choice of five wheel base lengths. Each has five speeds forward and two reverse. Both trucks are of the double reduction drive type. Wheel base lengths range from 130 to 200 inches for the W-1 and from 144 to 235 inches for the W-3.

Much attention has been given to attractive design, finish and appearance, in line with the company's conviction that style is being demanded in creasing measure by up-to-date business men. The three-piece hood has controllable ventilators and the all-steel cab is modernly equipped. Radiator cover and lamp rims are chromium plated. Frame, chassis and wheels are finished in red, the hood, cowl and cab in gray-green lacquer, and the fenders and running boards in black enamel.

Engines are of the four-cylinder, valve-in-head type, with overhead cam shaft and valve mechanism.

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Low Prices Feature Willys-Knight Six

Toledo, O., June 11.—Prices on the new Willys-Knight Six announced today by the Willys-Overland Company are as follows:

Four-passenger Touring	$ 975
Two-passenger Roadster	975
Coupe, with rumble seat	1075
Coupe	975
Five-passenger Coach	975
Five-passenger Sedan	1075
Five-pas. De Luxe Sedan	1195
Chassis	825

Sloan Presents Data on Distribution of G. M. Stock

NEW YORK, June 11.—In the twelve months ended February 15, 1930, the number of holders of General Motors common stock increased 165 per cent., according to a statement issued today by Alfred P. Sloan, Jr., president.

First of all said Mr. Sloan, as a background for the analysis of this increase, it is appropriate to indicate the trend in the growth of our stockholders for the preceding years as indicated by the following tabulation:

Total Number of Common Stockholders Last Quarter of Each Year

1917	894
1918	2,103
1919	6,245
1920	17,025
1921	44,640
1922	44,049
1923	46,567
1924	45,217
1925	29,792

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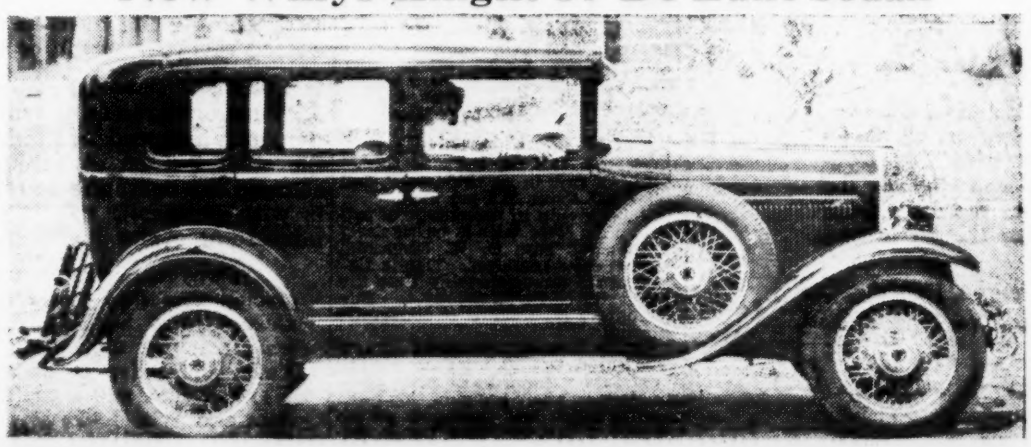
New Willys-Knight 87 De Luxe Sedan



A. S. M. E. Hears Discussions On Use of Wood in Bodies

Special from A. D. N. Detroit Bureau

DETROIT, June 11.—Discussions at the technical sessions of the American Society of Mechanical Engineers, meeting today, were led by Gilbert G. White, vice-president of Wood Parts, Inc., an expert in the use of wood in automobile body building, and by Charles S. Gladden, director of power and maintenance, General Motors Corporation.

According to Mr. White, construction of wood frames of automobile bodies and methods of procuring the materials has passed through radical changes in the last few years.

"The study of costs," he said, "showed that the average waste in cutting body parts from all thicknesses of lumber between one inch and three inches was 35 per cent., and the expense of transporting this waste from its source to the plant, together with the 700 pounds of

(Continued on page 11)

Overland Offers Lowest Priced Willys-Knight 6

(Continued from Page 1)

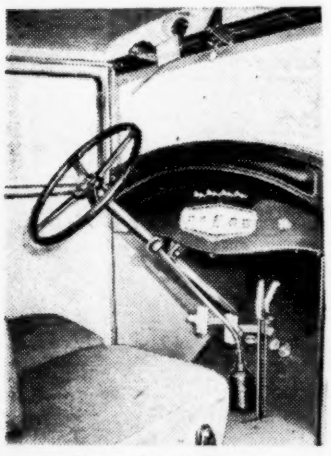
of by the use of the full force feed system. The oil is carried under pressure to crank shaft main bearings, connecting rod bearings, eccentric shaft bearings and timing chain. Sleeves, pistons and piston pins are oiled by spray.

A manually controlled heat valve is operated by a Bowden wire plunger located handily on the instrument panel. This provides minimum gas temperatures for maximum work and high temperatures for the warming-up period.

A seven-bearing crank shaft, drop forged, heat treated, machined and ground is employed. It is drilled for the full force-feed lubrication.

Strength and rigidity are provided in the construction of the frame, which is of alloy steel channel section, 9-64-inch stock, with 2-inch flange 5¼ inches deep. The seven sturdy cross members are riveted to the upper and lower flanges. All chassis parts are lubricated by Alemite pressure system.

The front axle is reverse Elliott type, I-beam, drop forged and heat treated. Timken thrust bearing is



Front Compartment

used in the steering knuckle and Timken bearings in the wheels.

The rear axle is semi-floating, pressed steel, banjo-type and has removable inspection plate.

The stearing gear is a semi-irreversible type worm and gear, with a ratio of 11 to 1. The 17-inch steering wheel is hard rubber with steel center.

Like all other products of Willys-Overland, the new car employs the popular "finger-tip control," which consists o fa single button in the center of the steering wheel, which enables the driver to start the engine, sound the horn or operate the lights without changing the driving position.

The brakes are Bendix Duo-Servo, internal expanding, two-shoe type. Braking area is 187 feet. The hand brake operates on all four wheels.

The speedometer, oil gauge, heat indicator, ammeter and electric gasoline gauge are attractively grouped on the instrument panel, while the hand throttle, spark control, heat control and choke are on the dash, within easy reach of the driver. The dash lighting is indirect.

Wire wheels are available for all models, but are standard equipment on the De Luxe Sedan. A metal trunk rack is equipment on all models equipped with wire wheels. Parking lights are mounted on forward fenders.

There is an adjustable steering post, narrow-rim steering wheel, adjustable front seat in sedan, double-acting Monroe hydraulic shock eliminators, mono-control for opening or closing the windshield.

The specifications of the new model follow:—

Chassis—Frame, own, alloy steel, channel section 9-64 inch stock, 2 inch flange by 5¼ inches deep; seven cross members; wheel base, 112½; de luxe sedan, 115 inches; over all length, 159 inches; de luxe sedan, 161½ inches; front springs, semi-elliptic, 1¾ x36 inches, chrome Vanadium steel; rear springs, semi-elliptic, 1¾ x53 inches, chrome Vanadium steel; Tryon spring shackles, Hotchkiss drive; Alemite pressure lubrication to all chassis parts.

Wheels—Wood demountable, wire wheels, optional extra cost, de luxe sedan wire standard.

Tires and Rims—29x5.50 balloon; rims, 4 inch base, 19 inches diameter.

Steering Gear—Worm and gear, ratio 11 to 1; steering post adjustable, 17-inch steering wheel, hard rubber, steel reinforced.

Rear Axle—Semi-floating, pressed steel, banjo type; gear ratio, 4.89-1; optional ratio, 5.11-1: 5.11-1 standard, 115-inch wheel base; diameter at bearings, 1⅜ inches; 10 spline axle shafts; differential case, one-piece malleable iron; differential two-pinion type, with straight shaft; pinion shaft, stem type.

Brakes—Bendix Duo-Servo internal expanding, two-shoe, self-energizing type. Total braking area, 187 square inches. Hand brake operates on all four wheels.

Propeller Shaft—1¾ inches diameter mechanics machine, universal joints.

Power Plant—Engine, six cylinder, four-point suspension. Cylinder bore, 2⅛ inches; stroke, 4⅜ inches. Piston displacement, 177.9 cubic inches. Horse power rating, 20.7; actual horse power 55 at 3,000 r. p. m. Compression ratio, 5.88-1 (17 per cent.).

Sleeve Rods—Drop forged steel, I-beam section heat treated. Spun-babbitt bearings, ⅞-inch diameter, ¾-inch long. Pin in upper end 15-32-inch in diameter, floating in rod and sleeve.

Eccentric Shaft—Drop forged steel, heat treated, seven bearings.

Bearing Sizes:—

Front—Diameter, 2.188 inches; length, 1⅜ inches.

First Int.—Diameter, 1.972 inches; length, ¾ inches.

Second Int. — Diameter, 1.962 inches; length, ¾ inches.

Center—Diameter, 1.952 inches; length, 1¼ inches.

Third Int. — Diameter, 1.942 inches; length, ¾ inch.

Fourth Int. — Diameter, 1.932 inches; length, ¾ inch.

Rear—Diameter, 1.922 inches; length, 1¼ inches.

Silent timing chain drives eccentric shaft and generator drive shaft, 1¼ inches wide, automatic adjustment.

Crank Shaft — Seven-bearing, weight fifty pounds, heat treated.

Bearing sizes:—

Front—Diameter, 2⅜ inches; length, 2 inches.

First Int.—Diameter, 2⅜ inches; length, 1¼ inches.

Second Int.—Diameter, 2⅜ inches; length, 1¼ inches.

Center — Diameter, 2⅜ inches; length, 2⅛ inches.

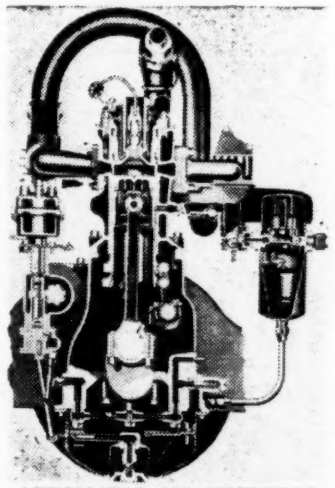
Third Int.—Diameter, 2⅜ inches; length, 1¼ inches.

Foutrh Int.—Diameter, 2⅝ inches; length, 1¼ inches.

Rear — Diameter, 2⅜ inches; length, 2½ inches.

Total bearing area, 89.07 inches.

Connecting Rods—I-beam section,



AUTOMATIC OIL RECTIFIER

10 inches long, heat treated. Spun babbitt bearings, 2 inches diameter, 1⅝ inches long.

Pistons—Aluminum alloy, invar steel strut. Piston pin locked in piston. Piston pin bearing, bronze diamond bore, 51-64x1⅛ inches. Piston pin, 51-64x2¾ inches. Piston rings, four, one oil ring, ⅛ inch; three compression rings, ⅛ inch.

Engine Lubrication—Full pressure to crank shaft main bearings, connecting rod bearings, eccentric shaft bearings and timing chain. Spray to sleeves, pistons and piston pins. Oil pump, internal gear type, driven off generator drive shaft. Automatic oil control valve. Bayonet type oil gauge on left side of engine. Skinner oil rectifier.

Clutch—Single plate, dry disc.

Transmission — Three speeds. Main shaft mounting on ball bearings, counter shaft on bronze bearings. Gears and shafts of alloy steel.

Gear ratios:—

Low—3.15-1.

Second—1.78-1.

High—Direct.

Reverse—4.20-1.

Cooling System — Cellular type radiator, 4¼-gallon capacity. Chro-

(Continued on page 11)

BUICK'S APRIL GAIN 2½% OVER MARCH IN ABOVE $1,200 CLASS

Flint, Mich., June 11.—That Buick's position in the primary price class is becoming stronger each month is proved by April registration figures which show that Buick's per cent. of all cars selling above $1,200 (15 different makes) gained 2½ per cent. over March.

Registration figures for April of last year show that at that time Buick sold 24.6 per cent. of the 15 makes of cars in its price class, and this April shows 31.1 per cent.

"Buick's gain in percentage of primary price class sales is particularly significant," says C. W. Churchill, general sales maneger. "These figures prove unquestionably that the popularity of Buick among the fine car buyers of America is constantly growing.

"These figures, therefore, clearly accentuate Buick's position as the outstanding leader in its price class. And we are justly proud of this leadership, which has come only as the result of the universal public acceptance of our product."

Carry 2 Spares with T-N EXTRA TIRE CARRIER

DEALER'S JOY

AN EXTRA TIRE and tube, an extra rim, another tire cover, all go on the same cash ticket with T-N Double Carriers. This means joy for the dealer, and comfort, freedom from tire trouble worry, for the car owner.

RETAIL PRICE { Chevrolet 6, 1929-30, $4.00 / Other Cars, $3.00 Per Set

Thompson-Neaylon Mfg. Co.

3545 South Morgan Street

Chicago, Ill.

SPARKS from DETROIT

Improved Business Conditions in Michigan

* * *

Chemical Reaction

* * *

Mr. Schaeffer's Appointment

Fred Kingsbury—Detroit Editor

"DURING the past month a slight improvement occurred in Michigan business conditions compared with the previous month," says the Michigan Graphic, publication of the First National Bank of Detroit. "However, a marked decrease is still shown from the same period last year, while in some cases an improvement over the 1928 period is noticeable. Production of electric energy, industrial consumption of electric power, and number of automobiles manufactured still is considerably below 1929 but somewhat improved over 1928. Building awards, cement production and member bank clearings all showed a decrease from the respective amounts reported for the same period of 1929 and 1928."

This seems to be a clear picture of Michigan conditions at the present time. Indications are that there will be a further betterment of industrial conditions during the present month.

* * *

CHARLES F. KETTERING, head of General Motors research laboratories, speaking at a meeting of the American Institute of Chemical Engineers in Detroit recently, as reported in this column, said:

"Through the arrangement of the atom almost any material we can think of can be reproduced. The day of the synthesist is coming, and one of the great future industries of the world will be industrial chemistry. The tremendous importance of the chemist to modern industry may be seen in the fact that even the automobile industry is a chemical process, that the propulsion of an auomobile is purely chemical reaction."

* * *

Arthur Schaeffer has been selected as sales manager of the Detroit district for the Republic Steel Corporation, it is announced by H. T. Gilbert, vice-president in charge of sales of the corporation. Mr. Schaeffer was formerly sales manager in Detroit for the Central Alloy Steel Corporation.

* * *

The effect of price reduction on sales is shown by a sharp increase registered by Packard following its price drop. H. W. Peters, vice-president in charge of distribution, says that while an increase was anticipated, the company underestimated the advance in sales.

Packard has just received word from Earl Anthony, distributor in California, to the effect that total Packard sales in that state on Thursday, Friday and Saturday, following announcement of price reductions, equaled one-third of the total sales of that car in California during the entire month of May.

* * *

R. M. Rowland, who looks after sales promotion and advertising for the Chrysler Corporation, has joined the two-meal-a-day fans. We discovered this fact the other day when we walked into his office just before the noon hour. He spends this hour working right through at his office. Mr. Rowland weighs—well, we won't tell that, but we will say that he doesn't look his weight.

* * *

IF you think that automobile men are the only ones who are going out after business in a big way, you should come to Detroit and watch the newspaper advertising men from all over the country at work. These salesmen appear to be on the job every minute, and the talk is all of schedules.

We are prone to believe that nearly every newspaper man who solicits automobile advertisements has been to Detroit this year or will be before the end of the month.

* * *

DETROIT motorists want pure gasoline to "feed" their motor cars. As a result of a three-months investigation, nine independent filling station operators were arrested the other day on charges of fraudulent advertising. It is charged the operators bought "bootleg" gasoline and mixed it with nationally advertised automobile fuel, selling the mixture as a gasoline of good quality.

* * *

It was recently announced that A. D. Madge has been elected secretary and treasurer of the Detroit Aircraft Corporation. Mr. Madge is well known in this city. He was formerly with Arthur Henderson & Co. of New York, and prior to that was auditor for Montgomery Ward & Co., and secretary and treasurer of the Motor Rim and Wheel Corporation. He has also been identified with companies controlled by General Motors.

Vermont New Car Registration in April Slightly Off

420 UNITS BEHIND DURING 4 MONTHS

Ford Goes Ahead 354 Units, or 60.2%, In Same Period

NEW YORK, June 11.—Vermont's new passenger car registrations in April were but 286 units behind the same month last year, a decrease of 15.8 per cent., while in the first four months the decline was only 420 units, or 13.3 per cent.

Ford, with a total of 532 units in April, had a gain of 206, or 63.2 per cent. In the four months Ford's gain was 354 units, or 60.2 per cent.

Auburn in April had a gain of 900 per cent., and in the four months an increase of 1100 per cent. Graham had a gain of 28 per cent. in April and an increase of 2.4 per cent. in the four months. Hupmobile's gain in April was 15.4 per cent., and 52.6 per cent. in the four months. Marmon-Roosevelt had an increase of 100 per cent. in the month and 350 per cent. in the period. Reo's gain in April was 42.9 per cent and 50 per cent. in the four months. Oakland, with a one unit loss in April, had a gain of 6.8 per cent.

The registration for April, compared with the same month last year, showing percentage gain or loss, follows:—

	1930	1929	Per C't. Gain or Loss
Auburn	10	1	900.0
Buick	79	121	*34.7
Cadillac	2	11	*81.8
Chevrolet	289	310	*6.8
Chrysler	43	66	*34.9
Cord	1	..	..
De Soto	15	22	*31.8
Dodge	46	51	*9.8
Durant	13	15	*13.3
Essex	75	171	*56.1
Ford	532	326	63.2
Franklin	4	..	..
Gardner	1	..	..
Graham	32	25	28.0
Hudson	28	58	*34.5
Hupmobile	15	13	15.4
La Salle	13	14	*7.1
Lincoln	1	..	..
Marmon-Roosevelt	2	1	100.0
Marquette	7	..	..
Nash	40	154	*74.0
Oakland	13	14	*7.1
Oldsmobile	40	50	*20.0
Packard	12	23	*47.8
Peerless	4	5	*20.0
Pierce-Arrow	3	8	*62.5
Plymouth	67	90	*25.5
Pontiac	42	54	*22.2
Reo	10	7	42.9
St'debaker-Erskine	24	56	*57.1
Viking	3	..	..
Whippet	29	114	*74.6
Willys	23	..	..
Willys-Knight	13	27	*51.8
Miscellaneous	..	9	..
Totals	1,531	1,817	*15.8

*Loss.

Registration for four months, as compared with the same period last year, showing percentage gain or loss, follows:

	1930	1929	% Gain or Loss
Auburn	12	1	1100.0
Buick	128	193	*33.7
Cadillac	7	15	*53.3
Chevrolet	540	561	*3.7
Chrysler	68	107	*36.4
Cord	3	..	..
De Soto	37	39	*5.1
Dodge	79	88	*10.2
Durant	25	25	..
Essex	137	298	*54
Ford	942	588	60.2
Franklin	12	..	..
Gardner	1	..	..
Graham	43	42	2.4
Hudson	54	101	*46.5
Hupmobile	29	19	52.6
La Salle	18	23	*21.7
Lincoln	1	..	..
Marmon-Roosevelt	9	2	350.0
Marquette	22	..	..
Nash	77	235	*67.3
Oakland	31	29	6.8
Oldsmobile	76	95	*20.0
Packard	23	35	*34.3
Peerless	8	9	*11.1
Pierce-Arrow	5	8	*37.5
Plymouth	105	130	*19.2
Pontiac	77	91	*15.4
Reo	15	10	50.0
Studebaker-Erskine	50	123	*59.4
Viking	4	..	..
Whippet	57	239	*79.1
Willys	29	..	..
Willys-Knight	21	41	*48.8
Miscellaneous	..	22	..
Totals	2,745	3,165	*13.3

*Loss.

FEW CARS HOLD SAME SALES RANK IN 1930 THEY HELD YEAR AGO

(Continued from Page 1)

from eleventh to eighth. Plymouth has advanced from twelfth to eleventh, and De Soto from fifteenth to twelfth.

Studebaker stands in ninth position so far this year, as against tenth a year ago, while Hupmobile has advanced from nineteenth to sixteenth.

Following is the ranking of the first twenty passenger cars in point of registrations in the United States in the first four months of 1930, with their respective 1929 rank also shown:—

1930		1929
1	Ford	1
2	Chevrolet	2
3	Buick	6
4	Pontiac	5
5	Essex	3
6	Dodge	7
7	Oldsmobile	9
8	Chrysler	11
9	Studebaker	10
10	Nash	8
11	Plymouth	12
12	De Soto	15
13	Hudson	13
14	Willys	*
15	Graham	14
16	Hupmobile	19
17	Durant	16
18	Oakland	20
19	Whippet	4
20	Packard	18

*Then the Whippet Six.

As has been pointed out before in the columns of this paper, both Ford and Chevrolet have increased their percentages of the total business this year, Ford from 31.4 to 41 per cent. and Chevrolet from 20 to 24.3 per cent. No other cars among the first twenty are selling a bigger share of the total sales this year than last, although several are holding to the same percentage.

The sales of the car bearing the Chrysler name have accounted for 2 per cent. of the total so far this year, as in 1929, while the De Soto has remained steady at 1.4 per cent. The Hupmobile is accounting for 1 per cent., the same as a year ago, and the Oakland 9-10 of 1 per cent., also the same.

Following are the percentages of the total new car sales accounted for by each of twenty leading sellers in the first four months of this year, as compared with the percentages in the corresponding period of last year:—

	Percentage of Total 1930	1929
Ford	41.0	31.4
Chevrolet	24.3	20.0
Buick	3.3	3.6
Pontiac	2.9	4.5
Essex	2.9	6.0
Dodge	2.6	3.2
Oldsmobile	2.1	2.4
Chrysler	2.0	2.0
Studebaker	1.8	2.2
Nash	1.7	2.9
Plymouth	1.5	1.8
De Soto	1.4	1.4
Hudson	1.3	2.2
Willys	1.2	*
Graham	1.1	1.5
Hupmobile	1.0	1.0
Durant	0.9	1.2
Oakland	0.9	0.9
Whippet	0.8	5.6
Packard	0.8	1.1

*Then the Whippet Six.

Following are the registrations of the twenty leading sellers in the first four months of the current year, as compared with a year ago:—

	1930.	1929.
Ford	428.242	411,045
Chevrolet	253,399	263,144
Buick	34.866	47,792
Pontiac	30,751	59,134
Essex	30,439	79,142
Dodge	27,284	42,985
Oldsmobile	21,737	31,794
Chrysler	20,693	27,377
Studebaker	19,547	29,293
Nash	17,635	39,264
Plymouth	16,133	24,643
De Soto	14,967	18,926
Hudson	13,780	23,225
Willys	13,234	*
Graham	11,158	20,672
Hupmobile	10,268	12,977
Durant	9,531	16,837
Oakland	9,462	12,811
Whippet	9,250	73,514
Packard	8,848	14,148

*Then the Whippet Six.

SORENG-MANEGOLD NAMES WM. HENDERSON IN CHICAGO

Chicago, Ill., June 11.—William A. Henderson, formerly sales engineer with the Hershey division of Houdaille-Hershey Corporation, has become affiliated with Soreng-Manegold Company of this city, and will act in the capacity of district sales manager here.

G. M. Stockholders Widely Distributed Throughout U.S.

(Continued from Page 1)

1926	30,210	
1927	43,116	
1928	48,169	
1929	176,693	
1929, 3d quarter	117,767	15,461
1929, 4th quarter	176,693	58,926
1930, 1st quarter	218,392	41,699

In view of the unprecedented growth of the number of stockholders during the last year, it is interesting to examine the figures for each quarter:

Analysis by Quarters

		Gain Over Previous Quarter
1928, 4th quarter	48,169	.....
1929, 1st quarter	82,415	34,246
1929, 2d quarter	102,306	19,891

The marked upward trend, it will be noted, had its beginning in the first quarter of 1929, influenced, no doubt, by the split up of General Motors common stock on a two and a half for one basis in January, 1929. The greatest gain, however, was in the fourth quarter, which, it will be recalled, was the period including the break in the stock market.

As indicated by the following table, the increases have been most pronounced among small investors:

No. of Common Stockholders

Classification	Feb. 16, 1929	Jan. 24, 1930	Increase In Numbers	Increase
1— 10 Shares	24,106	99,159	75,053	311%
11— 20 Shares	12,854	34,581	21,727	169%
21— 50 Shares	20,229	45,155	24,926	123%
51—100 Shares	9,504	18,281	8,777	92%
101 Shares and Over	15,722	21,237	5,515	35%
	82,415	218,413	135,998	165%

In round figures, there are 100,000 General Motors stockholders owning ten shares or less and almost 180,000 owning fifty shares and less.

Of the total number of common stockholders, 84,319 are women.

It is interesting to note that the increases have come, not from any one section of the country, but from all the states in the Union. This is especially significant when we take into account the fact that General Motors does not engage in the sale of its stock or influence its general distribution, except perhaps (and as is likely the case) for the influence that the ownership of General Motors products may have upon the purchase of its securities.

Although some of the figures by states are small, the percentages are significant. The greatest percentage gains, it will be noted, are in areas remote from the stock trading centers. Arizona, for example, leads the list, with an increase of over 800 per cent. Idaho is second, with an increase of 751 per cent. Then Nevada, 668 per cent., and North Dakota, 568 per cent.

Common Stockholders by States 1929—1930

States.	Stockholders Feb. 16, 1929.	Feb. 15, 1930.	% of Inc.
Alabama	154	434	181.8
Arizona	28	254	807.1
Arkansas	64	249	289.1
California	2,761	13,123	375.3
Colorado	349	1,013	190.2
Connecticut	3,023	5,768	90.8
Delaware	2,777	3,922	41.2
Dist. of Col.	1,206	3,035	151.6
Florida	336	1,016	202.4
Georgia	416	1,282	208.2
Idaho	29	247	751.7
Illinois	4,133	13,601	229.1
Indiana	1,344	3,667	172.8
Iowa	416	2,007	382.4
Kansas	134	694	417.9
Kentucky	963	2,156	123.9
Louisiana	164	795	384.7
Maine	506	1,359	168.6
Maryland	1,214	3,382	178.6
Massachusetts	4,357	11,641	167.2
Michigan	11,510	23,131	100.9
Minnesota	587	2,198	274.4
Mississippi	79	342	332.9
Missouri	1,320	3,557	169.5
Montana	116	584	403.4
Nebraska	187	752	302.1
Nevada	22	169	668.2
New Hampshire	484	1,263	160.9
New Jersey	4,011	11,376	183.6
New Mexico	44	199	352.3
New York	18,047	42,875	137.6
North Carolina	358	986	175.4
North Dakota	35	234	568.6
Ohio	3,968	9,322	134.9
Oklahoma	119	631	430.3
Oregon	227	1,193	425.5
Pennsylvania	10,680	28,065	162.8
Rhode Island	489	1,371	180.4
South Carolina	97	305	214.4
South Dakota	57	216	278.9
Tennessee	331	1,110	235.3
Texas	424	1,856	337.7
Utah	45	258	473.3
Vermont	241	883	266.4
Virginia	649	2,040	214.3
Washington	562	2,112	275.8
West Virginia	418	1,613	285.9
Wisconsin	1,476	4,391	197.5
Wyoming	42	42	476.2

"This wide distribution of General Motors stock," said Mr. Sloan, "coupled with our direct and indirect patronage of thousands of communities for raw materials and miscellaneous products, is all conducive toward a territorial disbursement of General Motors income more nearly paralleling the patronage which we enjoy out of the different sections of the country. We naturally look upon this as a highly desirable trend, because the wide scope of General Motors activities places upon us the obligation to concern ourselves with the fundamental factors affecting consumer buying power from a broad economic viewpoint.

"Furthermore, it is our conviction that few, if any, businesses are in a position to capitalize the goodwill of their stockholders to the same degree as is our business, for the reason that General Motors is engaged in the manufacture and sale of trade-marked consumer products which touch upon the lives of the people in a most intimate way. The automobile is always a popular topic of conversation and sales are dependent not alone on advertising and salesmanship but upon a number of factors, among which the influence of the stockholder looms up in an increasing significance.

"General Motors has always been especially solicitous of stockholder goodwill. It has been our aim to interest our stockholders in our operations through providing them with intimate facts regarding our business and extending the same frank and courteous treatment to all stockholders, irrespective of the size of their holdings. A review of stockholder correspondence passing over my desk indicates that the small stockholder is especially aggressive in the promotion of General Motors goodwill.

"We therefore look upon our greatly increased number of stockholders, and especially those 100,000 who own ten shares or less, as a most valuable asset and an influence which should greatly contribute towards our growth and prosperity in years to come."

INTERNATIONAL TRUCK OFFERS 2 NEW MODELS

(Continued from Page 1)

Each consists of five independently maintained sub-assemblies, which greatly simplify servicing. All parts are easily accessible, making possible a quick check-over. The model W-1 engine has a 4¼-inch bore and 5½-inch stroke, while the W-3 has a 4¾-inch bore and 5½-inch stroke. The brake horse power at governed speed of 1,800 r. p. m. is 53.5 for the W-1 and 60 for the W-3.

Among other features of design and equipment are an unusually strong pressed-steel channel frame designed especially for heavy hauling service; internal expanding four-wheel brakes, steering column set at angle to provide maximum foot room for the driver, shatter-proof glass in the rear of the cab and a front bumper. Axle ratios of the W-1 are 6.85 to 1, regular, and 8.40 or 9.95 to 1, special; for the W-3, 7.85 to 1, regular, and 9.60 or 11.40 to 1, special.

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Ada, Ohio

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TOLEDO, OHIO

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"Of, By and For the Entire Automotive Industry"

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Prosperity and Colds

IN economics, apparently, very small causes produce tremendous effects in their ultimate analysis. How many laymen would imagine that the common garden variety of colds, yes, just snuffles and coughs, could cost the United States as a nation the appalling sum of two billion dollars every year?

Scientists estimate that American workers every year lose this total of $2,000,000,000 in wages that are not paid them, because they are confined to their homes by ordinary colds. The cumulative action of what we are prone to consider minor matters, is frequently very much major in its effect on our national economic life.

What inspired all this was an announcement recently made by Dr. J. A. Pfeiffer, a pathologist of standing and professor at the medical school of the University of Maryland, that he has devised a serum which he believes will not only cure colds but give those treated immunity for from one to three years.

It is, of course, too early to say definitely that Dr. Pfeiffer's serum is completely effective, but if the upshot proves to be a real cure and immunization from colds, think of the economic saving that would result. An addition of $2,000,000,000 to the spending power of labor this year would take us around the corner to renewed prosperity. It would start the wheels of commerce moving in almost every line of industry. The wholesale value of all the motor vehicles manufactured in 1929, an abnormally prosperous year, was only $3,576,645,881.

Science in its laboratories with its discoveries of new materials and better materials, with its contributions to health insurance, is playing a tremendous part in the economic development of the human family.

Department Store Sales

IN a recent report by the Federal Reserve Board on department store sales throughout the country during April, there is considerable food for thought. We may be going through a depression, but certainly the fact that department store sales were up an average of 6 per cent. during April, 1930, over the same month in 1929, does not indicate any very serious curtailment of our buying power.

According to this report every Federal district showed an increase ranging from 1 to 12 per cent. Women's wear, men's wear and children's wear all showed marked increases over their sales totals for April of 1929.

The Federal Reserve Board also reports that stocks on hand in the department stores of the country are in better shape than they were a year ago.

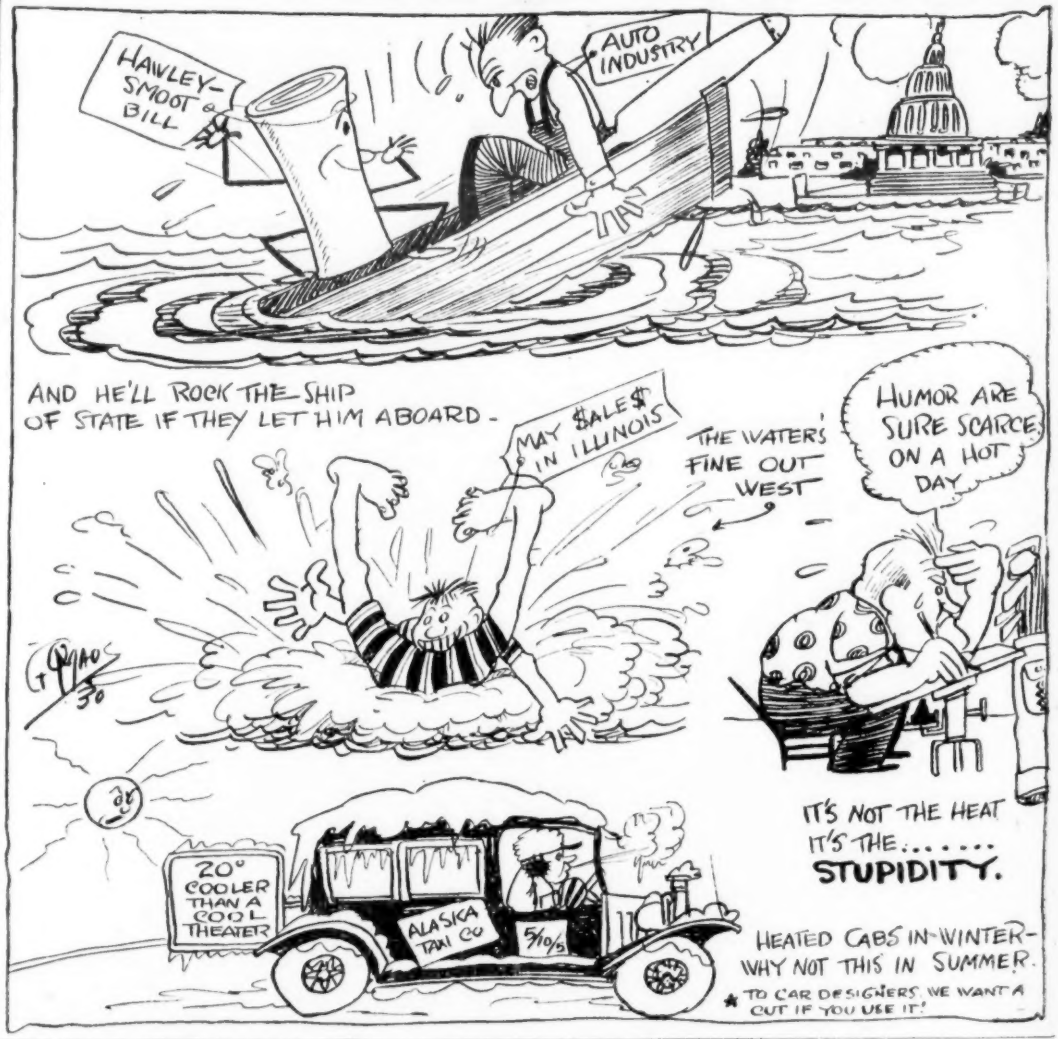
Surely this is an indication that the "buyers' strike" or the "delay in buying" or whatever we may choose to call it, is nearing its end. In some trades a return to normal purchasing may be slower in arriving, but it cannot be far away. In the automotive field a delayed market is piling up, which holds out a happy augury for impending business.

City and Suburb

IN the census returns that are now being assembled, there are a number of interesting tendencies that will be carefully noted by far-seeing merchants. The drift from "rural" to "urban" continues. The city's call is luring people, especially young people away from our farms. Of course, after the farmer's boy has spent thirty years slaving in the city, if he is lucky enough to amass enough money he promptly buys a farm, but the general drift is the other way.

However, there is another tendency equally as important and that is from the city itself to the suburbs. A typical instance: Cleveland shows a growth of 12 per cent. in the past decade, but Cleveland's suburbs have grown anywhere from 200 to 600 per cent. in population in the same period. This is a trend worth studying.

Here and There in the Trade Headlines— By MacConachie


HAWLEY-SMOOT BILL
AUTO INDUSTRY
AND HE'LL ROCK THE SHIP OF STATE IF THEY LET HIM ABOARD -
MAY ALE IN ILLINOIS
THE WATER'S FINE OUT WEST
HUMOR ARE SURE SCARCE ON A HOT DAY
20° COOLER THAN A COOL THEATER
ALASKA TAXI CO
IT'S NOT THE HEAT IT'S THE..... STUPIDITY.
HEATED CABS IN WINTER- WHY NOT THIS IN SUMMER.
* TO CAR DESIGNERS, WE WANT A CUT IF YOU USE IT!

AUBURN COMPANY ADDS 142 DEALERS IN MAY AND APRIL

Auburn, Ind., June 11.—Auburn has added 142 dealers to its organization in sixty days, N. E. McDarby, director of sales, announced today. Seventy-eight of these dealers were added in May and sixty-two in April. Total number of Auburn dealers is now at the highest point in the company's history with dealer working capital several millions greater than at any previous time.

AMERICAN HIGHWAY FILMS SHOWN IN SOUTH AMERICA

Washington, June 11.—The United States Bureau of Public Roads is distributing motion picture films of American highways throughout South America. They also are available for use by state highways departments, road organizations, automobile clubs, schools and colleges in this country.

COMING EVENTS

JUNE

23-26—**San Francisco, Cal.** Meeting American Electric Railway Association.
23-27—**Atlantic City, N. J.** American Society for Testing Materials annual meeting at Chalfonte-Haddon Hall.
26-28—**White Sulphur Springs, W. Va.** Steel Founders Society summer convention.
29-July 13—**Posen, Poland.** International Motor and Transport Show.

AUGUST

26-28—**Chicago, Ill.** Society of Automotive Engineers aeronautic meeting in conjunction with National Air Races.

SEPTEMBER

22-26—**Chicago, Ill.** American Society for Steel Treating meeting at Stevens Hotel.
29-Oct. 4—**Pittsburgh, Pa.** National Safety Council Annual Safety Congress.

OCTOBER

2-12—**Paris, France.** Automobile Salon.
6-11—**Washington, D. C.** Sixth International Road Congress.
6-11—**Washington, D. C.** American Roadbuilders' Association Convention.
8- 9—**Detroit, Mich.** Society of Automotive Engineers production meeting at Book-Cadillac Hotel.
22-24—**Pittsburgh, Pa.** Society of Automotive Engineers' transportation meeting.
16-25—**London, England.** Olympia Motor Show.

NOVEMBER

6-16—**Berlin, Germany.** International Automobile Show.
8-15—**Chicago, Ill.** Automobile Salon at Drake Hotel.
10-14—**Cleveland, O.** Motor and Equipment Association Show.
17-21—**Cleveland, O.** National Standard Parts Association Show.
30-Dec. 6—**New York.** Automobile Salon at Hotel Commodore.

DECEMBER

6-17—**Brussels, Belgium.** Automobile Exhibition.

JANUARY

3-10—**New York.** National Automobile Show.
24-31—**Chicago, Ill.** National Automobile Show.

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MERCHANDISING ACCESSORIES EQUIPMENT **WHOLESALE** DISTRIBUTION SHOP EQUIPMENT REPLACEMENTS

Selling Through the Other Fellow's Eyes Essential

This is the second of a series of short stories on successful service salesmanship by George Brosch, manager of the Automotive Merchandising and Marketing Division, Business Training Corporation. Editor.

By GEORGE BROSCH

"ONE of my biggest problems," says the manager of a large general garage in Wisconsin, "is to get our salesmen to reach the customer through his eyes as well as his ears. That may not sound like such a difficult problem, but I've been hammering away on it for a long time, and sometimes I wonder how far I am getting.

"The trouble with some of the men I take on here is that they fail to put themselves in the customer's shoes. They just don't get his slant on the transaction. So they don't have a clear idea of what they ought to do to make it easy for him to buy.

"Here's what happens, in too many cases. The customer goes up to the showcase and tells the salesman what he's interested in. Just for instance, let's say it's a horn. Well, the salesman takes a horn off the shelf and sets it on the counter. He may say nothing at all; or he may say, "There's a good horn. That's $15." He may go a step farther and bring out another horn and state its price. But from that point on, it's often a case of take it or leave it. The salesman will answer any questions the customer may ask, and he'll do it pleasantly. But he isn't really reaching the customer's interest. He's placed the product before the customer, and he assumes he's done his share. Now, if the customer wants that horn badly enough, he'll take it. If he doesn't, he'll walk out.

"Help the Customer to Understand"

"Sometimes it happens the other way, too—the salesman will do too much talking, or he'll talk too fast, or he'll talk over the customer's head. Take the case of a man who brings in his car because he's bothered with a noise. The service salesman dives down under the hood and comes up with the verdict that there's a loose pin in number three cylinder and that the only way to fix it will be to put in an oversize pin or replace the bushing. The customer hesitates and wants to know how much it will cost. The salesman tells him. When the customer thinks the figure is a little high, the salesman goes on to tell him that the pan will have to be dropped, the piston and connecting rod assembly, pulled the piston reamed out or the pin buishing replaced, and a new pin fitted in, and that it will take some time. The customer is a little bewildered, figures he probably doesn't have to have it done right away, and decides to let it go for the time being.

"What's been the trouble there? Well, everything the salesman told him was correct enough; but the salesman didn't stop to realize that the average car-owner knows very little about the inside of his engine. The customer hasn't understood what it's all about, and because he doesn't understand, he's skeptical, and because he's skeptical, he doesn't buy.

"Here's the way I'd have sold that job. When I saw the customer didn't know much about an engine, I'd have led him over to the work bench or the parts bin, picked up a piston and connecting rod assembly, shown him what I meant by a loose pin and why it was noisy, what could be done to correct it, and what the consequences would be if it wasn't fixed. I might also have gone on to explain how I recognized the trouble by its knock and located it by shorting out the cylinder. And, of course, I'd also have shown him the tools that would be used to do the job. That might take me a couple of minutes, but I'd have sold the job by doing it, and the customer would have had enough confidence in my ability so that he'd also bring his future work to me.

"Where did the accessory salesman, that I was speaking of a minute ago, fall down in trying to sell the horn? Well, he put one or two varieties in front of his customer and he told how much each one would cost, but he didn't turn a hand to help the customer buy it. And that's all the average customer needs—just a little help. Now if that salesman had set his best horn in front of the man, had attached a couple of wires to it, had invited him to press the button and hear what a fine, powerful, musical tone it had, and then had called attention to how strongly the horn was constructed and assured the customer it would last as long as the car itself, don't you suppose he'd have been a lot farther along toward making the sale?"

THE EASY ROAD TO THE SALE

As this garage manager pointed out, many an automotive salesman is overlooking the fact that the easiest road to the sale often lies through the customer's eyes. Car owners, like every one else, believe what they see much more readily than what they merely hear. Showing and demonstrating both products and service, therefore, ought to be the everyday practice of all automotive salesmen. There is practically no time in any sale when some form of showing or demonstrating will not speed up the buying process and make it easier for the customer to reach his decision. Actual demonstration will help to prevent hesitation or to remove it; it will forestall objections or overcome them; and it will often lead quickly and surely to a successful closing.

Editor's Column

FIFTEEN per cent. of the nation's traffic fatalities, which last year reached 33,060, resulted in part from defects in motor vehicles due to improper maintenance by owners or to the age of the vehicle, according to the report of the committee on maintenance of the motor vehicle of the National Conference on Street and Highway Safety.

Legislation in the various states to require periodic official inspection of the mechanical fitness of all automobiles and, at least in the case of four-year-old and resold cars, a certificate of inspection as a prerequisite to issuance or renewal of license plates, is recommended by the committee. It also favors vesting motor vehicle and traffic authorities with the power to condemn and remove from the highways automobiles that are found to be in an unsafe and unfit mechanical condition.

Regular inspection should cover brakes, head and rear lights, steering gear, horns and windshield wipers and other vital mechanical parts.

Defects found to require correction in the inspection campaigns or considered as principal or contributing causes of accidents covered by the special investigations were reported in the following percentages of vehicles examined: Defects in brakes, 24.5 to 28 per cent; lights, 13.3 to 25 per cent., and steering gear, horns and other accessories in various percentages up to 7 per cent. of each item.

Glaring or insufficient lights contribute to between 5 and 10 per cent. of all accidents, the committee found, or between 12½ and 25 per cent. of night accidents.

In emphasizing the increased hazard of defective equipment the committee said that it has estimated that average driving speeds have increased as much as ten miles an hour in the past two or three years, due to improved engines, brakes and other details of construction.

"An increase from twenty to thirty miles an hour, now not uncommon on many city streets," the committee added, "represents an increase of 50 per cent in speed but an increase of 125 per cent. in the energy and the destructive power of the moving vehicle because the energy is proportional to the square of the speed."

The committee also discussed the used-car situation, stating that the "universal habit of trading in old cars has made every automobile dealer a used-car dealer."

The trading-in process, the committee said, often continues until a car has passed through the hands of numerous owners, and while many used cars are carefully reconditioned and sold under a guarantee, a dealer often is forced by competition to take in trade an old car of no real value which he is glad to sell at almost any price that may be offered. Such vehicles, particularly in the hands of irresponsible persons, the committee said, are unquestionably a serious hazard to other drivers and to pedestrians.

Wholesale Brevities

Portland, Ore., June 11.—With the completion of an expansion program that increases their floor space 3000 square feet, now giving sufficient space to accommodate sixty cars, George L. Sammis, general manager of the Sunset Electric Company, has announced their appointment as distributors for Dayton Thorobred tires and Winfield carburetors.

Jacksonville, Fla., June 11.—Adjusto Auto Vent Company, a new automobile accessory concern, has been chartered here with a capital stock of 100 shares, par value $10 each. The board of directors is composed of R. P. Bentley, R. R. Lake and C. W. Persons.

Bridgeport, Conn., June 11.—Casco Products Corporation has completed a number of changes in two models of its automobile cigar lighters and will shortly introduce the improved line. Model numbers 530 and 480 are those affected.

Atlanta, Ga., June 11.—The Seiberling Rubber Company has just announced the appointment of three new independent dealers to handle Seiberling products in Atlanta. They are: Miller Service, 3070 Peachtree Road, northeast, Buckhead and 2161 Peachtree Road, northeast; the West End Tire and Battery Company, 774 Gordon St., southwest, and Brooks Shatterly Company, 1643 Jonesboro Road, Lakewood.

EXIDE BATTERY DEALERS HEAR SERVICE TALKS

Columbia, S. C., June 11.—Twenty-one Exide battery dealers from this section of the state gathered here a few days ago for a business conference. L. A. Odom, head of the Jarrett Battery Company of Columbia and the Odom Battery and Tire Company of Spartanburg, was in charge of the meeting.

Mark C. Pope, an executive of the Electric Storage Battery Company of Atlanta, was the chief speaker. T. V. Toomer, storeroom supervisor for South Carolina and Georgia, spoke on dealer service propositions. W. D. Hull, general manager of the Odom Battery and Tire Company, talked on store room and dealer relations.

AUTOMOTIVE OUTING BEING HELD AT PHILADELPHIA

Philadelphia, June 11.—The Automotive Outing, annually sponsored by the Automotive Service Association and the Automotive Boosters' Club No. 18, will be held tomorrow at the Turngemeinde Country Club. There will be a baseball game in the morning between teams selected from the Service association and the Boosters and luncheon will follow. There will be numerous field sports, tennis and quoits in the afternoon and prizes will be awarded to the winners. There will be dinner and a big entertainment in the evening. Between 200 and 300 members and guests are expected.

Attracted Attention at New Orleans Show

INCLUDED in the interesting exhibits at the automobile show held recently in New Orleans and sponsored by the Automobile Dealers' Association of that city was the display of the New Orleans Auto Supply Company, Inc. A conspicuous display of giant auto parts was accompanied by a collection of parts in miniature which had been gathered by R. F. Zerlin, president of the company. Another attraction was a demonstration of the facilities of the mechanical department of this jobbing concern

JOBBERS DIFFER ON SHOP WORK

Question Disputed by Two Leaders in Portland, Ore.

PORTLAND, ORE., June 11.—An up-to-date line of merchandise, backed up with plenty of hard work, is, in the opinion of Portland automotive parts jobbers, the essential factor that makes for success in the jobbing industry today. Whether a jobber must go in for shop operation is still a disputed question in this territory, but there is no doubt in any one's mind about the work.

"Good, hard, constructive work—and work for every one along the line—is the solution of the jobbing problem," according to E. R. Wiggins of the Wiggins Company, Inc. "And, of course, keep up with the times in merchandise."

As to shop operation, Mr. Wiggins stated that personally he did not think it a part of the jobber's business. It should be left to the shop man who has built his business around shop service and has equipped himself for it.

C. F. Wright, vice-president and general manager of Ballou & Wright and secretary of the Motor and Equipment Association, agreed with Mr. Wiggins that the jobber should stay out of shop operation. "The jobber's position is not, in any sense of the word, to sell mechanical service. His business is to sell equipment, not labor. When the jobber does service, he tears down sales of equipment in his own department."

"In every trade magazine I pick up I find some high-powered writer telling the jobber how to save himself," said Mr. Wright. "As far as I can see no panacea is needed. The jobber who is alert, keeps a good sales force, headed by a good salesmanager, and carries a well-selected stock isn't any worse off than he ever was. The same principles apply to jobbing as to every other trade, and legitimate business methods are all that's needed to carry on successfully. Keep the stock of merchandise abreast of the times and do a lot of hard work."

V. J. Rasmussen, manager of the Portland branch of Colyear Motor Sales Company, thinks that shop operation is essential to the jobber. He is now adding a fly-wheel gear lathe and brake drum lathe to his shop as a service to his garage and repair trade.

"We are forced into shop operation," he said, "because we couldn't get service. The shop that did our work had so much on hand to take care of that they couldn't promise our work for any set time, and nowadays you've got to give service."

DEFIANCE SPARK PLUG CONFERENCE IN SEATTLE

Portland, Ore., June 11 (UTPS).—Pacific Northwest representatives of Defiance Spark Plugs, Inc., held a sales conference in Seattle recently, which was well attended. The speakers were R. P. Lipe, president and L. L. Siegfield, vice-president and general sales manager of Toledo, O., and who in their addresses thanked the representatives for the increase in business and outlined plans for further growth in this section.

Among the Oregon representatives present were D. L. Brown, Portland manager, C. W. Lebengood, A. P. Scholl and E. F. Shroder, field representatives for the popular line. The Portland men reported a sales increase of 43 per cent. in the Oregon territory for the first quarter of 1930, one of the highest increases reported at the gathering.

H. G. BENTLEY JOINS THE TIFFANY DIVISION

Chicago, June 11.—H. G. Bentley, formerly with E. B. Sanderson Company of Boston, has just joined the Connecticut Telephone and Electric Corporation representing the Tiffany division in its sale of automotive accessories, replacement parts, etc., to the jobbing trade in Iowa, Nebraska, North and South Dakota, Wisconsin, Minnesota and Manitoba.

Mr. Bentley succeeds G. D. Spitler in that territory.

STUTZ LOST $2,419,657 IN LAST FISCAL YEAR

New York, June 11.—The Stutz Motor Car Company of America, Inc., for the year ended October 31, 1929, shows a net loss of $2,419,657, after charges and inventory adjustments. The previous report was for the ten months ended October 31, 1928, and showed net profit of $245,878, or $1.05 a share, on 232,827 shares of no par stock.

OTHER FINANCIAL NEWS

HOUDAILLE-HERSHEY

The Houdaille-Hershey Corporation yesterday declared a quarterly dividend of 30 cents on the Class B stock, placing the issue on a $1.20 annual basis against $2 previously. Regular quarterly dividend of 62½ cents was declared on Class A. Both dividends are payable July 1 to stock of record June 20.

DIAMOND ELECTRIC-SQUARE D

Stockholders of the Diamond Electric Manufacturing Company have approved the merger with Square D Company on the basis of share-for-share exchange for common and three and two-tenths shares of Square D preferred for each share of Diamond Electrical preferred.

B. F. GOODRICH

J. D. Tew, president of B. F. Goodrich Company, reports that the $30,000,000 in proceeds the company received last week from convertible debentures put the company in a position to retire its entire bank debt and to retain a substantial balance in cash for working capital. Thus the company is in an exceptionally strong position to carry out a wide program of production in the future.

"The demand for mechanical rubber goods such as belting is large," said Mr. Tew. "There is an active demand for rubber footwear and an increase in demand for druggists' sundries and for toys. Demand for tires should improve with good weather, and with deferred dealer demand that is bound sooner or later to come into the market.

"The Goodrich company has long been a diversified manufacturer," continued Mr. Tew. "Tires, while the chief tonnage item of Goodrich, do not represent as high a percentage of the total sales as is the case of most other large companies."

ALLIS-CHALMERS HAS 35% GAIN IN BOOKINGS

Milwaukee, June 11.—Despite the setback in farm machinery sales which has affected a number of the leading producers, the Allis-Chalmers Company is going along at a steady gait, with order books at the highest point for this year as of May 31. The orders of the company as June opens stood at $17,342,000, a gain of 35 per cent. over the figure of $12,872,000 at the opening of this year. On April 30 the total was $16,884,000.

The company also makes a favorable showing in total orders booked with $24,871,000 in five months of 1930, as compared with a total for all of last year of $48,493,000.

N. Y. CAR MERCHANTS TO PLAY GOLF ON JUNE 17

New York, June 11.—The Knollwood Country Club, White Plains, will be the scene of the third monthly golf tournament of the Automobile Merchants Association of New York, Inc., which will be held on Tuesday, June 17. The golf committee consisting of C. H. Larson, chairman; Fred J. Ryan, vice-chairman; C. H. Jennings and A. G. Southworth are arranging a most interesting program.

A. E. COLEMAN DEAD

Washington, D. C., June 11.—A. E. Coleman, president of the Coleman Motors Corporation, died at his home in Denver, Col., Monday morning.

CURRENT PRICES OF PASSENGER CAR MODELS

AUBURN—6-85. 120 W. B.

Sport Sedan	995	Sedan	1,095
Cabriolet	1,095		

AUBURN—8-95. 125 W. B.

Sport Sedan	1,195	Cabriolet	1,295
Sedan	1,295	Phaeton Sedan	1,395

AUBURN—8-125. 130 W. B.

Sport Sedan	1,495	Cabriolet	1,595
Sedan	1,595	Phaeton Sedan	1,695

BLACKHAWK—6 or 8 cyl. 127½ W. B.

5 Coupe	1,995	4 Speedster	2,535
5 Sedan	2,395	7 Cab. Coupe	2,595
2 Coupe	2,395	4 Speed. (T.C.)	2,735
2 Speedster	2,535		

BUICK—"22" 6-cyl. 118 W. B.

2 Bus. Coupe	1,260	4 Spt. Roadster	1,310
5 2-dr. Sedan	1,270	5 Phaeton	1,310
4 Special Coupe	1,300	5 4-dr. Sedan	1,330

BUICK—"50." 6-cyl. 124 W. B.

4 Coupe	1,510	5 4-dr. Sedan	1,540

BUICK—"90." 6-cyl. 132 W. B.

4 Roadster	1,585	5 4-dr. Sedan	1,760
7 Phaeton	1,595	7 4-dr. Sedan	1,910
4 De L. Coupe	1,695	7 Limousine	2,070
5 Coupe	1,740		

CADILLAC—8-cyl. 140 W. B.
Fisher Custom

2 Coupe	3,296	5 Sedan	3,695
5 Town Sedan	3,495	7 Sedan	3,795
2 Con. Coupe	3,595	7 Imp. Sedan	3,995
5 Coupe	3,595		

CADILLAC—8-cyl. 140 W. B.
Fleetwood Custom

2 Roadster	3,450	5 Sedanette	4,595
5 Sedan	4,195	7 Imperial	4,595
5 Sedan Cabrio	4,245	5 A. W. Phaeton	4,700
7 Sedan	4,295	Town Cabriolet	4,995
5 Imperial	4,395	Town Cabriolet	5,145
5 Imp. Cabrio.	4,445	Lim. Brougham	5,145
5 Sedanette Cabriolet	4,500		

CADILLAC—V-16. 148 W. B.
Fleetwood Custom

2 Roadster	5,350	Town Cabriolet (Leather)	7,150
2 Coupe	5,800		
2 Con. Coupe	5,900	Lim. Brougham	7,150
5 Club Sedan	5,950	7 Sedan	7,225
5 Sedan	5,950	5 Imperial	7,300
5 Sedan Cabrio.	6,125	5 Imp. Cabriolet	7,350
5 Phaeton	6,150	A. W. Phaeton	7,350
7 Sedan	6,225	7 Imp. Sedan	7,525
5 Imperial	6,300	Town Cabriolet (Opera seats)	8,750
5 Imp. Cabrio.	6,350		
7 Imp. Sedan	6,525	Town Cabriolet (quarter windows)	8,750
A. W. Phaeton	6,650		
2 Coupe	6,850		
2 Con. Coupe	6,900	Town Cabriolet (leather quarters)	8,750
5 Club Sedan	6,950		
5 Sedan	6,950		
Town Cabriolet	7,000	Lim. Brougham	8,750
5 Sedan Cabrio.	7,125	Town Brougham	9,200
Town Cabriolet	7,150	Town Brougham	9,700

CHEVROLET—6-cyl. 107 W. B.

Roadster	495	Coupe	565
Phaeton	495	Sport Coupe	625
Sport Roadster	525	Club Sedan	625
Coach	565	Sedan	675
		Special Sedan	725

CHRYSLER—"6." 6-cyl.

Business Coupe	795	Phaeton	835
Royal Coupe (R. S.)	835	4-dr. Sedan	845
Roadster	835	Con. Coupe (R. S.)	925

CHRYSLER—66. 6-cyl.

2 Business Coupe	995	Roadster (RS)	1,025
5 Brougham	995	Royal Coupe (RS)	1,075
5 Phaeton	1,025	Royal Sedan	1,095

CHRYSLER—70. 6-cyl.

5 Phaeton	1,295	Royal Coupe (RS)	1,395
2-4 R'dster (RS)	1,345	Royal Sedan	1,445
2 B'sin's Coupe	1,345	Con. Coupe (RS)	1,545
5 Brougham	1,345		

CHRYSLER—77. 6-cyl.

Business Coupe	1,395	Royal Sedan	1,495
Roadster (RS)	1,665	4 Crown Coupe	1,575
Town Sedan	1,445	Crown Sedan	1,595
Royal Coupe (R. S.)	1,495	5 Phaeton (TC)	1,795
		Con. Coupe (RS)	1,825

CHRYSLER—Imperial. 6 cyl.

2-4 R'ster (RS)	2,995	7 Phaeton	3,195
2 Stan. Coupe	3,095	7 Sedan	3,195
5 Sedan	3,075	7 Sedan Lim.	3,575
2-4 Con.C'p (RS)	3,095	4 Spt. Phaeton	3,955
5 Town Sedan	3,075		

CORD—8-cyl. 137½ W. B.

Sedan	3,095	Cabriolet	3,295
Brougham	3,095	Phaeton Sedan	3,295

DE SOTO—6-cyl.

Roadster	810	De Luxe Coupe	860
Bus. Coupe	830	4-dr. Sedan	875
Phaeton	830	Convertible Coupe	945

DE SOTO—8-cyl.

Business Coupe	965	De Luxe Coupe	1,025
Roadster	985	Touring	1,035
Standard Sedan	995	De Luxe Sedan	1,065

DODGE—Six.

Business Coupe	835	4-dr. Sedan	865
Stn. Coupe (RS)	855	Phaeton	875
Roadster	855	Cn. Coupe (RS)	935

DODGE—Eight.

Roadster (RS)	1,095	Stan. Cp. (RS)	1,125
Cn. Coupe (RS)	1,195	Sedan	1,145

DODGE—Senior Six. 6-cyl. 120 W. B.

5 Brougham	1,545	Roadster (RS)	1,615
4-dr. Sedan	1,595	4-dr. Lan. Sed.	1,645
2 Coupe (RS)	1,595		

DODGE—New Six. 6-cyl. 112 W. B.

2 Coupe (RS)	1,595	Phaeton	1,025
Business Coupe	945	DeL. Coupe (RS)	1,025
Roadster (RS)	995	4 Victoria	1,025
5 2-dr. Brough'm	995	4-dr. DeL. Sed.	1,065
4-dr. Sedan	995		

DURANT—"40." 4-cyl. 107 W. B.

Coupe	595	4-dr. Sedan	695
Spt. Roadr (RS)	595		

DURANT—"60." 6-cyl. 109 W. B.

Spt. Roadr (RS)	685	4-dr. Sedan	750
Coupe	685		

DURANT—"63." 6-cyl. 112 W. B.
(Three Speed Transmission)

Coupe	845	Phaeton	925
4-dr. Sedan	895		

DURANT—"66" 6-cyl. 112 W. B.
(Four Speed Transmission)

Coupe (R. S.)	945	Phaeton	1,025
4-dr. Sedan	995		

DURANT—"70." 6-cyl. 119 W. B.
(Four Speed Transmission)

Coupe (R. S.)	1,195	4-dr. Sedan	1,285

DURANT—6-14. 6-cyl.
(Three Speed Transmission)

Business Coupe	785	*DeL. Coupe	945
Stan. Coupe (RS)	815	*DeL. Phaeton	960
Stan. Sedan	845	*DeL. Sedan	975
*DeL. Roadster	935		
*Six wire wheels.			

DURANT—6-17. 6-cyl.
(Four Speed Transmission)

Business Coupe	995	*DeL. Coupe	1,155
Stan. Coupe (R. S.)	1,025	*DeL. Roadster	1,155
Stan. Sedan	1,065	*DeL. Phaeton	1,185
*Six wire wheels.		*DeL. Sedan	1,195

ELCAR—75-A. 6-cyl. 117 W. B.

2 Roadster	995	4 Con. Landau	1,265
4 Roadster	1,245	5 Club Sedan	1,295
2 Coupe	1,245	5 Sedan	1,295
4 Coupe	1,265		

ELCAR—95. 8-cyl. 123 W. B.

2 Roadster	1,395	4 Con. Landau	1,565
4 Roadster	1,535	5 Club Sedan	1,595
2 Coupe	1,545	5 Sedan	1,595
4 Coupe	1,565		

ELCAR—96. 8-cyl. 123 W. B.

4 Roadster	1,635	5 Club Sedan	1,695
2 Coupe	1,645	4 Fleetwing Sed.	1,695
4 Con. Landau	1,665	5 Princess Sed.	1,695
4 Coupe	1,665		

ELCAR—130. 8-cyl. 130 W. B.

2 Coupe	1,945	4 Con. Landau	1,995
5 Sedan	1,995	4 Roadster	1,995
5 Club Sedan	1,995	5 Touring	1,995
4 Coupe	1,995	7 Sedan	2,120

ELCAR—120. 8-cyl. 127 W. B.

5 Touring	2,465	7 Sedan	2,645
5 Sedan	2,465		

ELCAR—140. 8-cyl. 135 W. B.

4 Roadster	2,645	5 Sedan	2,645
4 Con. Landau	2,645	5 Con. Sedan	2,750

ESSEX—6-cyl. 113 W. B.

2 Coupe	735	Brougham	895
Coupe (RS)	750	Phaeton	925
Coach	765	Roadster	925
Stan. Sedan	825	Sun Sedan	995
Touring Sedan	875		

FORD—Model A. 4-cyl. 103½ W. B.

Pickup Op. Cab.	425	De Luxe Coupe	545
Roadster	435	Standard Sedan	
Phaeton	440	(3 win.)	600
Pickup Cl. Cab.	455	Cabriolet	625
Tudor Sedan	495	4-dr. De L. Sedan	
Coupe	495	(2 win.)	640
Sport Coupe	525	Town Sedan	660

FRANKLIN—Series 145. 125 W. B.

Sedan	2395	Vic. Brougham	2,695
Coupe	2,610	Con. Coupe	2,710
De Luxe Sedan	2,670	Town Sedan	2,725
Club Sedan	2,675	Pursuit	2,750

FRANKLIN—Series 147. 132 W. B.

Salon Special	2,715	Limousine	3,070
7 Sedan	2,875	Sedan Lim.	3,125
Roadstcr	2,885	Speedster (5 wire wheels)	3,425
5 Pirate Tour.	2,885		
7 Pirate Phaet.	2,970		

FRANKLIN—Custom. 132 W. B.

†Dietrich Con. Speedster	3,725	†Holbrook-Avion Sedan	6,300
†Deuville Sed.	5,100	†Locke Con. Sed.	7,600
Dietrich Town Car (wood wheels)	5,200	†Dietrich Pirate Coupe	8,300
Derham Cabriol.	6,100		
†Wire wheels.			

GARDNER—Model 130. 130 W. B.

Sport Sedan	1,945	Coupe	1,995
Brougham	1,995	Sedan	2,045
Roadster	1,995		

GARDNER—Model 140. 125 W. B.

Sport Sedan	1,595	Brougham	1,645
Coupe	1,645	Sedan	1,695
Roadster	1,645		

GARDNER—Model 136. 122 W. B.

Sport Sedan	1,195	Brougham	1,245
Coupe	1,245	Roadster	1,245

GRAHAM—6-cyl. Standard. 115 W. B.

2 Coupe	845	2 De L. Coupe (R. S.)	945
5 Town Sedan	845		
2 Coupe (R.S.)	895	5 De L. Sedan	995
2 De L. Coupe	895	2 Roadster (R.S.)	995
5 Univ. Sedan	895	5 Phaeton	1,015
		2 Cabriolet (RS)	1,065

GRAHAM—6-cyl. Special. 115 W. B.

2 Coupe	1,195	5 Sedan	1,225
2 Coupe (R.S.)	1,225		

GRAHAM—8-cyl. Standard. 122 W. B.

2 Coupe (R.S.)	1,445	7 Sedan (134 W. B.)	1,745
5 Sedan	1,445	5 Conv. Sedan	1,985

GRAHAM—8-cyl. Special. 122 W. B.

2 Coupe (R. S.)	1,595	7 Sedan (134 W. B.)	1,844
5 Sedan	1,595	5 Conv. Sedan	2,085

GRAHAM—8-cyl. 127 W. B.

5 Sedan	2,025	2 Roadster (RS)	2,225
4 Coupe	2,025	2 Cabriolet (RS)	2,245
2 Coupe (R.S.)	2,225	5 Phaeton	2,295

GRAHAM—8-cyl. 137 W. B.

7 Phaeton	2,295	7 LeBaron Limo. Sedan	3,940
5 Sedan	2,455		
5 Town Sedan	2,455	7 LeB. Twn Car	4,255
7 Sedan	2,525	7 LeBar. Limo.	4,505
7 Limousine	2,595		

HUDSON—8-cyl. 119 W. B.

Coach	1,050	Roadster	1,200
Coupe	1,100	5 Phaeton	1,300
Stan. Sedan	1,150	Sun Sedan	1,355

HUDSON—8-cyl. 126 W. B.

Tour. Sedan	1,250	7 Phaeton	1,500
Brougham	1,295	7 Sedan	1,650

HUPMOBILE—Series S Standard. 111 W.B.

Com. Coupe	995	2 Cabriolet (RS)	1,110
Coupe (R.S.)	1,095	5 Phaeton	1,135
5 4-dr. Sedan	1,095	Roadster	1,175

HUPMOBILE—Series C. Standard. 121 W.B.

5 4-dr. Sedan	1,695	7 Phaeton (5 disc wheels)	1,785
2 Coupe (R.S.)	1,695		
5 Vic. Coupe	1,715	5 Town Sedan (5 disc wheels)	1,805
2 Cabriolet	1,770		

HUPMOBILE—Series H. Standard Models.

5 4-dr Sedan	2,080	7 Phaeton (5 disc wheels)	2,190
2 Coupe (R.S.)	2,080		
5 Vic. Coupe	2,100	5 Town Sedan (5 disc wheels)	2,190
2 Cabriolet (RS)	2,155		

HUPMOBILE—Series U.

7 Sedan	2,495	7 Limousine	2,645

JORDAN—70. 8-cyl. 120 W. B.

Sunshine Sedan (collapsible)	1,495		

JORDAN—Standard 80. 120 W. B.

5 Sedan	1,795	Coupe	1,795

JORDAN—Great 90. 8-cyl. 125 W. B.

5 Sedan	2,295	Sport Sedan	2,595
Coupe (Standard)	2,295	Playboy Roadster	2,595
Coupe (convertible)	2,495	Speedboy Sport Phaeton	2,795

JORDAN—Great 90. 8-cyl. 131 W. B.

7 Touring	2,495	7 Sedan Limousine	2,695
7 Sedan	2,595		

JORDAN—Speedway Series. 145 W. B.

"Ace" Roadster Phaeton	5,550	"Sportsman" Sport Sedan	5,550

KISSEL—White Eagle 73. 117 W. B.

4-dr Bro. Sed.	1,595	Sedan	1,695
All Year Coupe Rdstr (F.T.)	1,695	Coupe Roadster (Solid Top)	1,695

KISSEL—White Eagle 95. 125 W. B.

4-dr. Br. Sed.	1,995	Sedan	2,095
All Year Coupe Rdstr (F.T.)	2,095	Speedster	2,195
		Tourster	2,195
Coupe Roadster (Solid Top)	2,095	A. Y. Broug	2,595
		7 Sedan	2,595

KISSEL—White Eagle. Model 124

All Year Brou.	3,185	4-dr. Brou. Sed.	3,275
Coupe Roadster (Solid Top)	3,185	Speedster	3,275
		Tourster	3,275
All Year Coupe Rdstr (F.T.)	3,185	7-Sedan	3,395
		Berline Sedan	3,885

LA SALLE—8-cyl. 134 W. B.
Fisher Custom

2 Coupe	2,490	5 Town Sedan	2,590
5 Sedan	2,565	7 Sedan	2,775
2 Con. Coupe	2,590	7 Imp. Sedan	2,925
5 Coupe	2,590		

LA SALLE—8-cyl. Fleetwood. 134 W. B.

5 Phaeton	2,385	5 Sedan Cabrio.	3,725
2 Roadster	2,450	5 Sedanette	3,825
7 Touring	2,525	5 Phaeton	3,995

LINCOLN—8-cyl. 136 W. B.

7 Spt. Touring	4,200	Town Sedan (2 windows)	4,400
4 Spt. Phaeton	4,200		
4 Spt. Phaeton (tonneau cowl and windshield)	4,400	Town Sedan (3 windows)	4,400
2 Club Roadstr	4,400	5 Sedan	4,500
5 Coupe	4,400	7 Sedan	4,700
		7 Limousine	4,900

LINCOLN—8-cyl. Custom. 136 W. B.

2 Coupe (Judkins)	5,000	7 Cabriolet (N. C. A. W.) by Le Baron	6,900
4 Coupe Sedan (Le Baron)	5,300	7 Brougham (A. W.) Brunn	7,000
Berline (2 win.) (Judkins)	5,600	7 Cabriolet (S. C. A. W.) Le Baron	7,100
Berline (3 win.) (Judkins)	5,600		
7 Limousine (Willoughby)	5,900	7 Cabriolet (A.W. non or semi-col.) Brunn	7,200
4 Con. Coupe (Dietrich)	6,200	7 Cabriolet (fully collapsible) by Le Baron	7,200
4 Con. Sedan (Dietrich)	6,600		

MARMON—Big Eight

5 Sedan	2,740	7 Sedan	2,920
5 4-dr. Brough.	2,770	7 Sedan Lim.	3,130
5 4-dr. Clb Sed.	2,770	7 Touring	3,170
2 Coupe (R.S.)	2,850		

MARMON—79. 8-cyl.

2 Coupe (R.S.)	1,995	5 4-dr. Club Sed.	2,070
5 Sedan	2,020	2 Convertible Coupe (R.S.)	2,120
5 Phaeton	2,020		
5 4-dr. Brough.	2,070		

MARMON—69. 8-cyl.

2 Coupe (R.S.)	1,495	5 Phaeton	1,610
5 Sedan	1,520	2 Convertible Coupe (R.S.)	1,610
5 4-dr. Brough.	1,565		
5 4-dr. Club Sed	1,565		

MARMON—Roosevelt. 8-cyl.

2 Coupe (R.S.)	995	2 Convertible Coupe (R.S.)	1,175
5 Sedan	1,075		
4 Vic. Coupe	1,145		

De luxe equipment can be had on the Marmon at a moderate additional cost.

MARQUETTE—6-cyl. 114 W. B.

2 Bus. Coupe	990	Special Coupe (R.S.)	1,020
2-dr. Sedan	1,000	4-dr. Sedan	1,060
Roadster (RS)	1,020		
5 Phaeton	1,020		

NASH—Single Six. 114½ W. B.

5 2-dr. Sedan	935	5 4-dr. Sedan	1,005
2 Coupe	940	4 Cabriolet	1,005
4 Roadster	975	5 De L. Sedan	1,095
4 Coupe (RS)	980	Folding Landau	1,155
5 Touring	995		

NASH—Twin Ignition Six. 118 W. B.

5 2-dr. Sedan	1,325	4 Coupe (RS)	1,395
2 Coupe	1,345	4 Victoria	1,410
4 Roadster	1,365	5 4-dr. Sedan	1,415
4 Cabriolet	1,385		

NASH—Twin Ignition Six. 128¼ W. B.

7 Touring	1,475	7 Sedan	1,745
5 Touring (Tonneau Cowl)	1,595	7 Limousine	1,920

(Recent price changes in bold face)

NASH—Twin Ignition Eight. 124 W. B.

5 2-dr. Sedan	1,675	5 4-dr. Sedan	1,795

NASH—Twin Ignition Eight. 133 W. B.

7 Touring	1,845	5 Victoria	2,045
2-4 Cabriolet	1,875	5 Ambassador	2,095
2 Coupe	1,915	7 Sedan	2,195
2-4 Coupe	1,975	7 Limousine	2,385
5 Touring (Tonneau Cowl)	1,975		

OAKLAND—8-cyl. 117 W. B.

Roadster	1,025	Sport Coupe	1,115
Coupe	1,045	4-dr. Sedan	1,145
2-dr. Sedan	1,065	Custon Sedan	1,195
Phaeton	1,075		

OLDSMOBILE—6-cyl. Standard. 113½ W.B.

2-dr. Sedan	895	4-dr. Sedan	995
Coupe	895	Con Roadster	995
Sport Coupe	965	Pat. Sedan	1,060
Phaeton	965		

OLDSMOBILE—6-cyl. Special. 113½ W. B.

2-dr. Sedan	970	4-dr. Sedan	1,070
Coupe	970	Con. Roadster	1,070
Sport Coupe	1,040	Pat. Sedan	1,135
Phaeton	1,040		

OLDSMOBILE—6-cyl. De Luxe. 113½ W.B.

2-dr. Sedan	1,025	4-dr. Sedan	1,125
Coupe	1,025	Con. Roadster	1,125
Sport Coupe	1,095	Pat. Sedan	1,190
Phaeton	1,095		

OLDSMOBILE—6-cyl. 113½ W. B.
(5 Wire Wheel Equipment)

2-dr. Sedan	950	4-dr. Sedan	1,050
Coupe	950	Con. Roadster	1,050
Sport Coupe	1,020	Pat. Sedan	1,115
Phaeton	1,020		

PACKARD—726. Standard 8. 127½ W. B.

5 Sedan	2,085		

PACKARD—733. Standard 8. 134½ W. B.

2 Runabout	2,025	5 Coupe	2,275
4 Phaeton	2,025	5 Club Sedan	2,275
7 Touring	2,125	4 Spt. Phaeton	2,325
2 Coupe	2,125	7 Sedan	2,385
2 Con. Coupe	2,150	7 Sedan Limou.	2,485

PACKARD—740. Custom 8. 140½ W. B.

4 Phaeton	3,190	5 Sedan	3,585
2-4 Roadster	3,190	5 Coupe	3,650
2-4 Coupe	3,295	5 Club Sedan	3,750
7 Touring	3,325	7 Sedan	3,785
2-4 Con. Coupe	3,350	7 Sedan Limous.	3,885
4 Spt. Phaeton	3,490		

PACKARD—745. De Luxe 8. 145½ W. B.

7 Touring	4,585	5 Sedan	4,935
4 Phaeton	4,585	5 Coupe	5,100
2-4 Roadster	4,585	5 Club Sedan	5,150
2-4 Coupe	4,785	7 Sedan	5,185
2-4 Con. Coupe	4,885	7 Sedan Limous.	5,350
4 Spt. Phaeton	4,885		

PACKARD—Speedster. 134 W. B.

4 Phaeton	5,200	4 Victoria	6,000
4 Runabout	5,200	5 Sedan	6,000

PACKARD—Individual Custom. 145½ W.B.

2 4-dr. Conv. Coupe (Derham)	6,334	6 Spt. Cabriolet (Brewster)	7,154
4 Conv. Victoria (Dietrich)	6,414	6 Spt. Limousine (Brewster)	7,159
4 Conv. Victoria (Waterhouse)	6,514	6 Spt. Sedan Limo. (Brewster)	7,334
4 Conv. Sedan (Dietrich)	6,694	7 Laudaulet (Le Baron)	7,339
6 Cabriolet (Le Baron)	6,784	6 Spt. Landaulet (Brewster)	7,494
6 Sedan Limou. (Le Baron)	6,859	6 Spt. Cabriolet (Le Baron)	9,174
4 Conv. Sedan (Brewster)	6,904	7 Cabriolet (Rollston)	9,849
6 Sedan Limou. (Le Baron)	6,954	6 Cabriolet (Rollston)	9,984
7 Cabriolet (Le Baron)	6,954	7 Cabriolet (Rollston)	10,049
6 Landaulet (Le Baron)	7,889		

PEERLESS—6-cyl. "61." 116 W. B.

2 Roadster	995	4 Victoria	1,145
2 Coupe	1,095	5 Sedan	1,195

PEERLESS—Standard 8. 118 W. B.

5 Sedan	1,495	5 Brougham	1,545
2 Coupe (R.S.)	2,795	2 Cabriolet (RS)	1,595
5 Club Sedan	1,545		

PEERLESS—Custom 8. 138 W. B.

5 Sedan	2,795	5 Brougham	2,845
2 Coupe (R.S.)	2,795	7 Sedan	2,945
5 Club Sedan	2,845	7 Limousine	3,145

PEERLESS—Master 8. 125 W. B.

5 Sedan	1,995	5 Brougham	2,045
2 Coupe (R.S.)	1,995	2 Cabriolet	2,005
5 Club Sedan	2,045		

PIERCE-ARROW—Group A. 8-cyl. 144 W.B.

7 Sedan	4,485	En. Dr. Lim.	4,685

PIERCE-ARROW—Group B. 8-cyl. 134 W.B.

Roadster	3,125	Con. Coupe	3,350
Touring	3,125	4 Spt. Phaeton	3,425

PIERCE-ARROW—Group B. 8-cyl. 139 W.B.

Vic. Coupe	3,475	7 Sedan	3,625
5 Sedan	3,495	Club Berline	3,695
Club Sedan	3,495	En. Dr. Lim.	3,825

PIERCE-ARROW—Group C. 8-cyl. 132 W.B.

Club Brougham	2,695	5 Sedan	2,875
Coupe	2,865		

PLYMOUTH—4-cyl.

Standard Coupe	590	2-4 Coupe (R. S.)	625
2 4-dr. Roadster (R. S.)	610	5 4-dr. Sed

Sales Chiefs See Passing Of Yesterday's Quota Rule

IN a recent issue of this newspaper there appeared an editorial under the title, "Never Again." In this editorial we discussed the possibility that when the automobile business was once more on the high road of prosperity, whether the ancient trouble of overloading dealers would again crop up in some quarters.

We held that there would not be a return of this old trouble, first because the manufacturers realize the folly of it, second, because the dealers would no longer tolerate it and finally because the bankers would refuse to permit it in any case.

This editorial has stirred up considerable interesting comment, which we desire to pass on to our readers:—

CONSTRUCTIVE HELP TO DEALER IS NEEDED

"It cannot speak with any authority as to the future attitude of other automobile manufacturers toward arbitrary shipments and quota forcing in a period of great prosperity. I can speak for Studebaker. It has been against our policy to make any arbitrary shipments for a number of years, and that policy will undoubtedly continue in the future whether times are good or bad.

"Going beyond the specific questions which you raise, it is my thought that an elimination of abuses on the part of manufacturers will not of itself meet the present situation. A constructive sales effort directed toward helping the dealer sell more cars at retail and make more money should take the place of forcing for wholesale business."

PAUL G. HOFFMAN, Vice-President Studebaker Corp., South Bend, Ind.

A GUIDE TO BE FOLLOWED BY ALL

"I have read with considerable interest the editorial, 'Never Again.' It is extremely constructive to my mind and is so valuable that I think it should be framed and put on the wall of every manufacturer and dealer as a guide when we get back into the rush of production and demand again.

"My personal belief is that this has been a great benefit to us. I know in our own business it has served us well in the development of men and controls that would not have been possible under the old order. The hard job will be to keep every one in the same attitude when the dam of orders that is being held up at this time breaks upon us again as it undoubtedly will."

ROY FAULKNER,
Vice-president Auburn Automobile Company, Auburn, Ind.

HAS THIS TROUBLE BEEN EXAGGERATED IN PAST?

"It is true that a few factories with big production have made a practice of forcing cars on dealers. The majority of factories do not.

"The errors committed by a few have received a tremendous amount of publicity; in fact, more publicity than I think is warranted. It has reached a stage now where in many instances dealers are not carrying enough cars for good business, on account of the tremendous amount of propaganda that has gone out.

"A merchant who handles drygoods, groceries, shoes or furnishings, if he is going to do any business, has to have a reasonable stock on hand. We know of some instances in our own institution where dealers are losing sales by not having cars on hand. Aren't we going a little too far in spreading this propaganda?

"I think that dealers are wise enough at the present time—from those I have met—(and I have met a lot of them in the last year) to look out for themselves quite well. Let's give them a little propaganda of carrying a reasonable stock on hand!

"The writer finds in a personal canvass of the places of business of our dealers throughout the United States that those dealers who are making a real effort and doing the ordinary things necessary to sell cars are selling them at the present time, and are making money—not as much money as they have made in the past, but enough to justify their existence in the business.

"Let's get out a little propaganda that there is money in the automobile business for dealers. If we do not get out some propaganda of this kind pretty soon a lot of people are going to withdraw from the industry and representation is going to be very hard to get. I should like to see more propaganda to the effect that a man who goes into the automobile business can make money if he uses the same ingenuity that any other merchandiser uses in selling merchandise and making money. I know that in both the truck and passenger car fields money is to be made at the present time."

R. T. HODGKINS,
General Sales Manager Durant Motor Co., Detroit, Mich.

A DEALER SPEAKS HIS MIND

"In looking over your May 24 issue, I note the two references to the used car situation. Personally, I think it will take considerable more than the few generalities set forth by Paul Hoffman and the editorial in your paper to do anything to help the situation. It does not seem logical that the present system of pricing merchandise and advertising should be the same now, where 90 per cent. of the deals are trades, whereas formerly 90 per cent. were straight sales.

"The average household has an ice box, a radio, a piano, a sewing machine, a gas stove and furniture. How many people know or care what any of the above articles cost the factory to produce or the distributor to buy, or expect to get any money out of them when they need replacing? Also compare the discounts, or should we say mark ups, on the above units with automobiles and trucks.

"Regardless of Mr. Hoffman, your editorial, business last year, this year, or next year; the first thing the buyer wants to know is the trade in value of his old car, yet his old car should be a secondary consideration.

"Arming a succesful business or professional man with the list price and a generally accepted cost price to the dealer, the average automobile salesman is hardly able to profitably make the grade for himself or the dealer he represents. The only exception is the rare instance of a manufacturer having a near monopoly in his field. Many a widely heralded, successful merchant of some five or ten years ago, with this same five or ten years added to all his valuable experience, is today valiantly struggling to keep in business.

"The reason is obvious: not only strong competition, but chiefly merchandising used cars, increased selling expense and overhead. The customer has everything his own way. He dictates the value of his used car, successfully insists on paying nothing on the unusually large expense involved in selling it, not to mention the customary aftermath of free service. As I interpret Mr. Hoffman's solution of the problem, he means to buy them cheap enough to add selling and conditioning expenses, and still to be low enough in price to have the buyer clamor for them.

"Personally, I am sufficiently optimistic to believe the right solution of this perplexing problem is around the corner. Its ramifications are many and varied. It easily dwarfs all the many problems of production, distribution and operation. It is now vital to all concerned. Such being the case, an early solution is inevitable. It may be solved by stimulating business during the dull spots such as winter and late summer, thus making the peak periods a profitable surplus instead of merely balancing losses. Larger discounts may solve it. Systematic factory and dealer co-operative advertising may solve it. The elimination of a nationally advertised list price may solve it. Generalities conversation and the old pastime of chasing rainbows never will.

"CHARLES W. CURRY,
"C. W. Curry, Inc.,
"Baltimore, Md."

THE TIME IS PAST

"The time is past when a manufacturer can with success ship more cars into the territory than the business being developed will afford. We agree with the industrial leader whom you quote in that the days when you could load out anything you wanted to and tell the dealers to accept the shipments are gone forever."

T. E. JARRARD,
General Sales Manager Marmon Motor Car Co., Indianapolis, Ind.

CRUDE OIL PRODUCTION SHOWS SLIGHT DECREASE

New York, June 11.—The American Petroleum Institute estimates that the daily average gross crude oil production in the United States for the week ended June 7, 1930, was 2,588,050 barrels, as compared with 2,609,450 barrels for the preceding week, a decrease of 21,400 barrels. The daily average production east of California was 1,988,650 barrels, as compared with 2,004,350 barrels, a decrease of 15,700 barrels.

INSTALLMENT SALES LOSSES ARE SMALL

(Continued from Page 1)

installments, but that sales made on open account undoubtedly were for tires and accessories.

Automobile dealers reported represented all sizes of establishments. There were 36 with total sales each of less than $50,000, 73 with total sales from $50,000 to $99,999, 187 from $100,000 to $249,000, 148 from $250,000 to $499,000, 80 from $500,000 to $999,999 and 45 of $1,000,000 and over.

All sections of the country were represented by the dealers reporting. The smallest number reporting from any one section was twenty-one from the New England states and the largest was 153 from the Midwest.

CAR, TRUCK EXPORTS SHOW GAIN IN APRIL

(Continued from Page 1)

month was $648 and $667 respectively.

Shipments of "other automotive products" dropped from the March total of $18,036,582 to $14,404,045 during the month under discussion.

Imports of automotive products were valued at $204,655 as compared with the March total of $210,017. Automobiles and chassis numbered 38 units with a valuation of $69,431, while the March figure was placed at 43 units, valued at $100,226. Bodies and parts advanced from $100,791 in March to $135,224 for the current month.

More Money From Maintenance

¶ Three special issues of Automotive Daily News, ***June 24, 25 and 26,*** will feature methods of obtaining increased profits from maintenance sales.

¶ In addition to news of the day from all branches of the industry, there will be articles of interest to every service manager, every dealer, distributor, jobber and truck fleet owner in the country.

¶ These articles will show the newest and best equipment for lubricating cars and trucks, for washing, polishing and painting. The newest in shop equipment, parts and hand tools will be described and illustrated. Articles on new accessories and methods of merchandising them will appear.

¶ Manufacturers of shop equipment, parts, accessories, hand tools, lubricating equipment, lubricants, lacquer, etc., should benefit tremendously by an extra distribution of over 6,000 copies, each one reaching a prospective quantity buyer.

¶ There will be no increase in rates for the bonus distribution. Forms close two days preceding publication.

Automotive Daily News

H. A. TARANTOUS, *Bus. Mgr.* GRAYBAR BUILDING, NEW YORK CITY

CHICAGO OFFICE
Willard R. Cotton, Mgr.
333 No. Michigan Ave.
Chicago, Ill.

DETROIT OFFICE
Geo. M. Slocum, Mgr.
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Detroit, Mich.

EASTERN OFFICE
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Graybar Building
New York City

BOSTON OFFICE
Metz B. Hayes, Mgr.
Little Building
Boston, Mass.

PACIFIC COAST
Blanchard, Nichols & Coleman
Am. Nat. Bank Building
San Francisco, Cal.

STUDEBAKER RETAIL SALES IN MAY BEST IN LAST 8 MONTHS

South Bend, June 11.—"Studebaker dealers delivered more new Studebaker cars to retail purchasers in May than in any month since September, 1929, A. R. Erskine, president, said today.

"May deliveries to consumers in the United States were only 24 per cent. below deliveries of May last year, and those for the last ten days of May were only 18 per cent. less, while deliveries for the first four months of the year were 34 per cent. below last year. The corporation's May sales exceeded production by more than 1,000 cars, reducing its stock of new cars on hand June 1 in the United States and abroad to 4,528 cars, compared with 7,130 last year."

The corporation's dealers in the United States had stocks of 10,911 cars on June 1, the lowest for some years, against 17,529 last year. Temporary bank loans have been paid off and the corporation's bank balance is over $5,000,000, excluding that of Pierce-Arrow.

Mr. Erskine stated that Pierce-Arrow May deliveries to consumers were the best of any month this year and that deliveries of the last ten days were considerably better than any ten-day period this year. May exports broke all monthly records in the history of the Pierce-Arrow company. He also stated that Pierce-Arrow has over $1,000,000 in the bank, after discharging all bank loans, and is now entirely free of debt.

CLASSIFIED ADVERTISEMENTS IN THE AUTOMOTIVE DAILY NEWS BRING RESULTS

KEY TO ABBREVIATIONS USED IN THIS TABLE

GENERAL

*In addition to its regular line Oldsmobile also offers a de luxe line. De luxe equipment includes: Six wire wheels (with six tires and tubes), two wheels carried in front fender wells and securely locked in position, chromium-plated headlamps, four spring boots, folding trunk rack at rear and sheet metal fenders, etc., ducoed in color on those models on which ducoed sheet metal is more harmonious than is black enameled sheet metal. It is also a special line for 1930.

SPEEDOMETER

AC—AC Spark Plug Co., Flint, Mich.
NE—North East Appliance Corp., Rochester, N. Y.
Ste—Stewart-Warner Speedometer Corp., Chicago.
*Var—Various makes.

CLOCK

Borg—Borg Clock Co.
Jag—Jaeger Watch Co., New York city.
NH—New Haven, See Phi.
Phi—Phinney-Walker Co., New York city.
Ster—Sterling Clock Co., La Salle, Ill.
Tho—Seth Thomas Clock Co., New York, N. Y.
Wal—Waltham Watch Co., Waltham, Mass.
*Optional.

FUEL GAUGE

AC—AC Spark Plug Co., Flint, Mich.
K-S—King Seeley Corp., Ann Arbor, Mich.
Mot-M—Moto Meter Co., Inc., L. I. City, N. Y., and La Crosse, Wis.
Roc—Rochester Mfg. Co., Rochester, N. Y.
Ster—Sterling Clock Co., La Salle, Ill.

LOCK

BS—Briggs-Stratton Co., Milwaukee.
Ele—Mitchell Specialty Co., Holmesburg, Pa.
DR—Delco-Remy Corp., Anderson, Ind.
Her—Hershey Mfg. Co., Chicago.
Joh—Johnson Automobile Lock Co., St. Louis, Mo.
NE—North East Appliance Corp., Rochester, N. Y.
Sha—Shaler Lock Co., Milwaukee, Wis.
Yal—Yale & Towne Mfg. Co., Stamford, Conn.
*Reo Model 15 uses Mitchell.

SPARK PLUG

AC—AC Spark Plug Co., Flint, Mich.
Cha—Champion Spark Plug Co., Toledo, O.

BATTERY

Ex—Electric Storage Battery Co., Philadelphia.
Nat—National Lead Battery Co., St. Paul, Minn.
Pre—Prest-O-Lite Co., Indianapolis, Ind.
USL—U. S. L. Battery Corp., Niagara Falls, N. Y.
Wil—Willard Storage Battery Co., Cleveland, O.
*Var—Various makes—Exide, Willard, Delco-Remy and USL.

HEAT INDICATOR

AC—AC Spark Plug Co., Flint, Mich.
Mot-M—Moto Meter Co., Inc., Long Island City, N. Y., and La Crosse, Wis.
Ster—Sterling Clock Co., La Salle, Ill.

CIGAR LIGHTER

*Cigar lighters in many cases are optional equipment, and are not standard on all models; the names of lighters shown indicate the makes supplied to various car makers.
Cas—Casco Products Corp., Bridgeport, Conn.
GR—Grand Rapids Metalcraft Corp., Grand Rapids, Mich.
NE—North East Appliance Corp., Rochester, N. Y.
Cuno—Cuno Engineering Corp., Meriden, Conn.

SMOKING AND VANITY SETS

AWS—Art Metal Works, Newark, N. J.
GR—Grand Rapids Metalcraft Corp., Grand Rapids, Mich.
Lin—Linden.
VS—Van Sicklen Corp., Elgin, Ill.
*Extra equipment on Reo Model 15.
Tern—Ternstedt Mfg. Co., Detroit, Mich.
Cuno—Cuno Engineering Corp., Meriden, Conn.

BODY FINISH

Ditz—Ditzler Color Co., Detroit, Mich.
Due—E. I. du Pont de Nemours & Co., Philadelphia.
Gli—Glidden Co., Cleveland, O.
Mur—Murphy Varnish Co., Newark, N. J.
Val—Valentine & Co., New York city.
*Various other lacquers used.
†Also Gli.

STOP AND PARKING LIGHTS

Vic—Cincinnati-Victor Co., Cincinnati, O.
Aga—Federal Pressed Steel Co., Chicago.
Gui—Guide Lamp Corp., Anderson, Ind.
Hal—G. M. Hall Lamp Co., Detroit, Mich.
Ind—Indiana Lamp Corp., Connersville, Ind.
Ryan—Rico Sales Corp., Detroit.
Sto—Stover Signal Engineering Co., Racine, Wis.
JB—The Jno. W. Brown Lamp Mfg. Co., Columbus, O.
†Reo Model 15 uses Hall.

WINDSHIELD WINGS

Kok—Fulton Co., Milwaukee, Wis.
Per—Perfection Co., Chicago.
Bif—Biflex—Oakes Products Corp., No. Chicago, Ill.
†Not standard equipment.

HEATER

Gla—Gladiator Mfg. Co., Auburn, Ind.
Kel—Kelch; made by Grand Rapids Metalcraft Corp., Grand Rapids, Mich.
Per—Eaton Axle & Spring Co., Cleveland.
Wahl—Wahl Company, Chicago, Ill.
*Special equipment.
*Optional.

BUMPERS

Alloy Steel Spring & Axle Co., Jackson, Mich.
Bad—Badger Mfg. Corp., Milwaukee.
Bif—Biflex Corp., Waukegan, Ill.
Buck—See Cen.
Cen—Central Brass & Fixture Co., Springfield, O. Also makers of Buckeye bumpers.
CG—CG Spring & Bumper Co., Detroit.
Eat—Eaton Axle & Bumper Co., Cleveland.
Gen—General Spring and Bumper, Detroit, Mich.
Ste—Stewart-Warner Speedometer Corp., Chicago.
†Extra equipment.
*Also using Eat.
§Extra equipment on Reo Model 15.

WIRE WHEELS

Budd—Budd Wheel Co., Detroit, Mich.
MotoW—Motor Wheel Corp., Lansing, Mich.
Day—Dayton Wire Wheel Co., Dayton, O.
K-H—Kelsey-Hayes, Detroit, Mich.
Buffalo—Wire Wheel Corporation of America, Buffalo, N. Y.
*On some models.
**Using both Budd and Kelsey-Hayes.
†Not standard equipment.
‡Using both Kelsey Hayes and Motor Wheel Corp.

SHOCK ABSORBERS

Gab—The Gabriel Company, Cleveland.
Hou—Houde Engineering Corp., Buffalo, N. Y.
Lov—Delco Products Corp., Dayton, O.
Mon—Monroe Auto Equip. Mfg. Co., Monroe, Mich.
Wahl—Wahl Co., Chicago, Ill.
Wat—John Warren Watson Co., Philadelphia.

Passenger Car Equipment and Accessories

NAME AND MODEL	Speedometer	Clock	Fuel Gauge on Dash	Lock	Spark Plugs	Battery	Heat Indicator	*Cig. Lighter	Smoking Set	Vanity Set	Make of Body Finish Used	Stop Light	Parking or Side Light	Windshield Wings	Heater	Front Bumper	Rear Bumper	Wire Wheels	Shock Absorber
Auburn 8-95	Ste	Wal	K-S	Ele	Cha	USL	Mot-M	Cas	GR	—	Mur	Ind	Ind	—	*Gla	Yes	Yes	Day	Lov
Auburn 6-85	Ste	Wal	K-S	Ele	Cha	USL	Mot-M	Cas	—	—	Mur	Ind	Ind	—	*Kel	Yes	Yes	Day	Lov
Auburn 125	Ste	Wal	K-S	Ele	Cha	USL	Mot-M	Cas	GR	—	Mur	Ind	Ind	—	*Gla	Yes	Yes	Day	Lov
Blackhawk 6	Ste	Wal	Mot-M	DR	Cha	Pre	Mot-M	Cas	Lin	Lin	Val	Ind	Ind	Kok	—	Buck	Buck	K-H	Gab
Blackhawk 8	Ste	Wal	Mot-M	DR	Cha	Pre	Mot-M	Cas	Lin	Lin	Val	Ind	Ind	Kok	—	Buck	Buck	K-H	Gab
Buick 40	AC	—	K-S	Her	AC	Ex	AC	—	Tern	Tern	Duc	Gui	Gui	—	—	—	—	K-H	Lov
Buick 50	AC	—	K-S	Her	AC	Ex	AC	—	Tern	Tern	Duc	Gui	Gui	—	—	—	—	K-H	Lov
Buick 60	AC	—	K-S	Her	AC	Ex	AC	—	Tern	Tern	Duc	Gui	Gui	—	—	—	—	K-H	Lov
Cadillac	AC	Jag	Mot-M	DR	AC	Ex	AC	Cas	Tern	Tern	Duc	Hal	Hal	—	*Kel	Eat	Eat	K-H	Lov
Cadillac 452	AC	Jag	Mot-M	DR	AC	Ex	AC	Cuno	Tern	Tern	Duc	Hal	Hal	—	*Opt	Eat	Eat	Buffalo	Lov
Chevrolet	AC	—	AC	DR	AC	*Var	AC	—	Tern	—	Duc	Gui	Gui	—	*Own	†Own	Own	K-H	—
Chrysler 80	NE	Ster	Mot-M	Ele	AC	Wil	Mot-M	Cas	AWS	AWS	Duc	Hal	Hal	Per	—	NM	NM	MotoW	Hou
Chrysler 77	NE	*Wal	Mot-M	Ele	AC	Wil	Mot-M	Cas	AWS	AWS	Duc	Hal	Hal	Per	—	NM	NM	MotoW	Lov
Chrysler 70	NE	*Wal	—	Ele	AC	Wil	Mot-M	Cas	AWS	AWS	Duc	Hal	Hal	Per	—	NM	NM	MotoW	Lov
Chrysler 66	NE	*Wal	—	Ele	AC	—	Mot-M	Cas	—	—	Duc	Hal	Hal	—	—	—	—	‡	—
Cord Front Drive	Ste	No	Moto-M	Dr	Cha	USL	Ster	Cas	GR	No	Mur	Ind	Ind	No	No	Alloy	Alloy	Day	Hou
De Soto 6	NE	—	Mot-M	Sha	AC	Wil	—	—	VS	VS	Duc	Hal	Hal	—	—	Yes	Yes	MotoW	Lov
De Soto 8	NE	—	Mot-M	—	AC	Wil	Mot-M	—	VS	VS	Duc	Hal	Hal	—	—	Yes	Yes	MotoW	Lov
Dodge Six	NE	—	Mot-M	NE	AC	Wil	Mot-M	—	VS	VS	—	Hal	Hal	—	—	Yes	Yes	†Budd	Lov
Dodge Senior 6	NE	—	Mot-M	NE	AC	Wil	Mot-M	—	GR	GR	—	Ind	Hal	—	—	Yes	Yes	†Budd	Lov
Dodge DD	NE	—	Yes	—	AC	Wil	Mot-M	—	VS	VS	—	Hal	—	—	—	Yes	Yes	†Budd	Lov
Dodge 8	NE	—	Yes	—	AC	Wil	Mot-M	—	VS	VS	—	Hal	—	—	—	Yes	Yes	MotoW	Lov
Durant 6-14	NE	No	Mot-M	Ele	AC	USL	Yes	No	—	—	—	—	—	—	—	Eat	Eat	MotoW	Mon
Durant 6-17	NE	No	Mot-M	Ele	AC	USL	Yes	GR	—	—	—	—	—	—	—	—	—	MotoW	Mon
Elcar 6-75	Ste	—	Mot-M	Sha	Cha	USL	Mot-M	Cas	—	—	Mur	Hal	Hal	—	—	Ste	Ste	K-H	Gab
Elcar 8-95	Ste	—	Mot-M	Sha	Cha	USL	Mot-M	Cas	—	—	Mur	Gui	Gui	—	—	Ste	Ste	K-H	Gab
Elcar 8-96	Ste	Borg	Mot-M	Sha	Cha	USL	Mot-M	Cas	—	—	Mur	Hal	Hal	—	—	Ste	Ste	K-H	Gab
Elcar 8-130	Ste	Borg	Mot-M	Sha	Cha	USL	Mot-M	Cas	—	—	Mur	Hal	Hal	—	—	Ste	Ste	K-H	Gab
Elcar 140	Ste	Borg	Mot-M	Sha	Cha	USL	Mot-M	Cas	Yes	—	Mur	Hal	Hal	—	—	Ste	Ste	K-H	Gab
Essex 6	Ste	—	Mot-M	Ele	AC	Ex	Mot-M	—	—	—	—	JB	Yes	—	—	Own	Own	MotoW	Mon
Ford A	*Var	—	Own	Ele	Cha	Own	—	—	—	—	—	Yes	—	—	—	—	—	Own	Hou
Franklin 145-147	NE	*Jag	K-S	Yal	Cha	USL	—	Cas	GR	GR	*Duc	JB	JB	—	Kel	Gen	Gen	MotoW	Wahl
Gardner 150	Ste	*Borg	Mot-M	DR	Cha	Pre	Mot-M	Cas	VS	VS	†Ditz	—	—	—	—	—	—	MotoW	Lov
Gardner 140	Ste	*Borg	Mot-M	DR	Cha	Pre	Mot-M	Cas	VS	VS	†Ditz	—	—	—	—	CG	CG	MotoW	Lov
Gardner 136	Ste	*Borg	Mot-M	DR	Cha	Pre	Mot-M	Cas	VS	VS	†Ditz	—	—	—	—	CG	CG	MotoW	Lov
Graham Stan. 6	NE	—	K-S	Her	Cha	Wil	Mot-M	—	GR	GR	—	Hal	Hal	—	—	Ste	Ste	MotoW	Lov
Graham Sp. 6	NE	—	K-S	Her	Cha	Wil	Mot-M	—	GR	GR	—	Hal	Hal	—	—	Ste	Ste	MotoW	Lov
Graham Stan. 8	NE	—	K-S	Her	Cha	Wil	Mot-M	—	GR	GR	—	Hal	Hal	—	—	Ste	Ste	MotoW	Lov
Graham Sp. 8	NE	—	K-S	Her	Cha	Wil	Mot-M	—	GR	GR	—	Hal	Hal	—	—	Ste	Ste	MotoW	Lov
Graham Cust. 8	NE	*Ster	K-S	Her	Cha	Wil	Mot-M	Cas	—	—	—	JB	JB	—	—	Ste	Ste	MotoW	Hou
Hudson 8	Ste	—	Mot-M	Ele	AC	Ex	Mot-M	—	—	—	—	Hal	Hal	—	—	Own	Own	MotoW	Wahl
Hupmobile U	Ste	Wal	Ster	Ele	Cha	Wil	Mot-M	Cas	VS	—	Val	Hal	Hal	—	—	—	—	K-H	Gab
Hupmobile H	Ste	Wal	Ster	Ele	Cha	Wil	Mot-M	Cas	VS	—	Val	Hal	Hal	—	—	—	—	K-H	Gab
Hupmobile C	Ste	Wal	Ster	Ele	Cha	Wil	Mot-M	Cas	VS	—	Val	Hal	Hal	—	—	—	—	K-H	Gab
Hupmobile S	Ste	Wal	Ster	Ele	Cha	Wil	—	—	VS	—	Val	Hal	Hal	—	—	—	—	K-H	Gab
Jordan Mod. 8 G	AC	Ster	AC	Her	Cha	Wil	AC	NE	GR	—	Dit	Ind	JB	—	—	Cen	Cen	K-H	Gab
Jordan Mod. 8 T	Ste	Wal	Mot-M	Her	Cha	Wil	Mot-M	—	VS	—	Dit	Ind	Ind	—	—	Cen	Cen	K-H	Gab
Kissel 6-73	AC	Yes	K-S	Ign	AC	Wil	AC	Cas	Yes	Yes	Duc	Sto	Ryan	—	Per	Bad	Bad	MotoW	Lov
Kissel 8-95	AC	Yes	K-S	Ign	Cha	Wil	AC	Cas	Yes	Yes	Duc	Sto	Ryan	—	Per	Bad	Bad	MotoW	Lov
Kissel 8-126	AC	Yes	K-S	Ign	AC	Wil	AC	Cas	Yes	Yes	Duc	Sto	Ryan	—	Wahl	Bad	Bad	Day	Lov
La Salle	AC	Jag	Mot-M	DR	AC	Ex	AC	Cas	Tern	Tern	Duc	Hal	Hal	—	*Kel	Eat	Eat	K-H	Lov
Lincoln 8	NE	Tho	K-S	Her	Cha	Ex	—	Cas	Cuno	Yes	Duc	Own	Own	Own	—	Bif	Bif	Own	Hou
Marmon Eight-69	NE	—	Mot-M	DR	Cha	Nat	Mot-M	—	VS	VS	Val	—	—	Kok	—	CG	CG	†Budd	Wahl
Marmon Eight-79	NE	—	Mot-M	DR	Cha	Nat	Mot-M	Cas	VS	VS	Val	—	—	Kok	—	CG	CG	†Day	Wahl
Mar.-Roosev'lt 8	Ste	—	Mot-M	DR	Cha	Nat	—	—	—	—	Val	Vic	Vic	—	—	Ste	Ste	†Budd	Lov
Marmon Big 8	NE	*Ster	Mot-M	DR	Cha	Nat	Mot-M	Cas	VS	VS	Val	—	—	—	—	CG	CG	†Day	Gab
Marquette	AC	—	K-S	Her	AC	Ex	AC	—	Tern	—	Duc	Gui	—	—	—	—	—	K-H	Lov
Nash Tw. Ign. 8	AC	Borg	K-S	DR	AC	USL	Mot-M	Yes	GR	GR	Duc	Hal	Hal	—	—	Eat	Eat	MotoW	Lov
Nash Tw. Ign. 6	AC	—	K-S	DR	AC	USL	Mot-M	—	AWS	—	Duc	Hal	Hal	—	—	Ste	Ste	MotoW	Lov
Nash Single	AC	—	K-S	DR	AC	USL	AC	—	—	—	Duc	JB	JB	—	—	Ste	Ste	MotoW	Lov
Oakland 8	NE	—	K-S	DR	AC	Wil	—	—	Tern	Tern	Duc	Gui	Gui	—	—	Own	Own	MotoW	Lov
***Oldsmobile**	AC	—	K-S	DR	AC	Wil	AC	—	Tern	—	Duc	Gui	—	—	—	Own	Own	MotoW	Lov
Packard 726-733	NE	Jag	K-S	BS	Cha	Pre	Mot-M	Cas	Own	Yes	Val	Hal	Hal	†Bif	Kel	Cen	Yes	MotoW	Own
Packard 740-745	NE	*Jag	K-S	BS	Cha	Pre	Mot-M	Cas	Own	Yes	Val	Hal	Hal	†Bif	Kel	Cen	Yes	MotoW	Own
Peerless Stand. 8	AC	Ster	Mot-M	BS	Cha	Wil	Mot-M	Cas	GR	No	Val	Gui	—	No	No	Cen	Cen	†Budd	Gab
Peerless Mast. 8	AC	Ster	Mot-M	BS	Cha	Wil	Mot-M	Cas	GR	No	Val	Gui	—	—	—	Eat	Eat	Day	Gab
Peerless Cust. 8	AC	Ster	Mot-M	BS	Cha	Wil	Mot-M	Cas	GR	No	Val	Gui	—	—	—	Eat	Eat	Day	Gab
Pierce-A., C. B. A	NE	Wal	Mot-M	Her	Cha	Wil	Mot-M	NE	VS	VS	—	Aga	Aga	—	—	Eat	Eat	K-H	Hou
Plymouth	NE	—	Roc	Sha	AC	Wil	—	—	—	—	Duc	Hal	Hal	—	—	CG	CG	‡	—
Pontiac	AC	—	K-S	DR	AC	Pre	—	—	Tern	—	Duc	Gui	Gui	—	—	Own	Own	MotoW	Lov
Reo 15, 20, 25	Ste	—	K-S	*DR	Cha	Wil	AC	—	VS	VS	—	†Gui	—	—	—	§CG	§CG	MotoW	*Lov
Studebaker Six	Ste	—	K-S	Yal	Cha	Wil	Mot-M	—	—	—	—	Ind	—	—	No	Eat	Eat	K-H	Lov
Studebak'r Dict. 8	Ste	—	K-S	Her	Cha	Wil	Mot-M	—	—	—	—	Ind	—	—	—	Eat	Eat	K-H	Lov
Studebak'r Dict. 6	Ste	—	K-S	Her	Cha	Wil	Mot-M	—	—	—	—	Ind	—	—	—	Eat	Eat	K-H	Lov
Stud. Com. 8	Ste	—	K-S	Her	Cha	Wil	Mot-M	Yes	VS	VS	—	Ind	—	—	—	Eat	Eat	K-H	Lov
Studebaker Pres.	Ste	NH	K-S	Her	Cha	Wil	Mot-M	Yes	VS	VS	—	Ind	—	—	—	Eat	Eat	K-H	Hou
Stutz	Ste	Wal	Mot-M	DR	Cha	Pre	Mot-M	Cas	Lin	Lin	Val	Ind	Ind	Kok	—	Buck	Buck	K-H	Gab
Viking 8	AC	—	K-S	DR	AC	Wil	AC	—	VS	VS	Duc	Gui	—	—	—	Own	Own	MotoW	Lov
Whippet 96 A	NE	—	—	Ele	Cha	USL	—	—	—	—	—	Yes	—	—	—	—	—	*K-H	Wat
Whippet 98 A	NE	—	—	Ele	Cha	USL	—	—	—	—	—	Yes	Yes	—	—	—	—	*K-H	Wat
Willys 6-98 B	NE	—	Yes	Yes	Cha	USL	—	—	—	—	—	Yes	Yes	—	—	—	—	*K-H	Mon
Willys 8-80	NE	No	Yes	Yes	Cha	USL	Yes	—	—	—	—	Yes	Yes	—	—	—	—	*K-H	Mon
Willys-K. 66B	NE	—	Yes	Ele	Cha	USL	Yes	—	VS	VS	—	Yes	Yes	—	—	—	—	†Budd	Wat
Willys-K. 70B	NE	—	Yes	Ele	Cha	USL	Yes	—	VS	VS	—	Yes	Yes	—	—	—	—	**	Wat
Windsor 6-69	Ste	—	Mot-M	Sha	Cha	Nat	Mot-M	—	—	—	Gli	JB	JB	—	—	†Yes	†Yes	†Budd	Lov
Windsor 6-72-77	Ste	—	Mot-M	DR	Cha	USL	Mot-M	—	Yes	Yes	Gli	JB	JB	—	—	†Yes	†Yes	†Budd	Lov
Windsor 8-85	Ste	—	Mot-M	Joh	Cha	USL	Mot-M	—	Yes	Yes	Gli	JB	JB	—	—	†Yes	†Yes	†Budd	Lov
Windsor 8-92	Ste	—	Mot-M	DR	Cha	USL	Mot-M	—	Yes	Yes	Gli	JB	JB	—	—	†Yes	†Yes	†Budd	Lov

Ford, Chevrolet Sales Good in Two Centers

NEW, USED SALES KEEP ABOUT EVEN

Washington Dealers Find Business 'Fair' So Far This Month

WASHINGTON, June 11.—The first week in June has shown "just fair" results in Ford and Chevrolet business, with sales and new and used cars running about even among most of the dealers in the Washington metropolitan territory, which covers the District of Columbia, and nearby Virginia and Maryland.

Several dealers report disposing of more used cars during the first week of this month than new cars.

Although the week could not be characterized as showing any unusual activity, there is plenty of optimism as to prospects for the rest of the month.

June is considered one of the best selling months in this territory, and while the same month of last year was not extraordinary for Ford and Chevrolet sales, it was recalled today that June, 1928, was a banner month for most dealers here.

Washington enjoys unusually pleasant weather during June, with the majority of motorists planning their vacations, while during July and August, when the temperature rises to its peak here, there is a large exodus of motorists, the majority of whom are government clerks. Most of them rated, on account of their earning capacity, as either Ford or Chevrolet buyers.

Buying the new car during June gives them plenty of time to condition it for long road trips during the summer.

Ford dealers state that the Tudor sedan continues to be their quantity selling model, although there is a good pick-up in the demand for both sports roadsters and coupes, the latter undoubtedly representing the call of the road and the summer spirit to the heart of the average citizen, particularly as typified by the 56,000 government employees in the nation's capital.

In the Chevrolet line there also is said to be a strong and growing demand for sports models, except in used cars, where more favor is shown for the closed models.

C. E. Boteler, sales manager for Barry-Pate Motor Company, one of the largest Chevrolet distributors in the Washington territory, said there has developed an interesting trend in favor of both the new sports roadsters and coupes.

"Every customer who buys a sports model also seems to want a rumble seat," Mr. Boteler said. "The extra cost of the rumble seat doesn't cause any sales resistance. The prospective buyer regards the rumble seat in a sports model as a necessity this season, and not as an added luxury. The average buyer of the sports model apparently would just as soon go without a spare tire as do without a rumble seat.

"The bright, pleasant colors of the sports model cars undoubtedly figure in the buying psychology of the automobile purchaser at this time of the year. They suggest all of the good times and vacation days that he is looking forward to enjoying."

J. E. Murphy, sales manager of the Anacostia Motor Company, handling Fords, also reports a favorable reaction to the lighter colored paint jobs.

"Demand for the different colors is very well distributed," he said, "but we notice that the lighter colored models are being selected by a very worthwhile percentage of buyers."

Though optimism prevails as to the outlook for Ford and Chevrolet sales, it is generally recognized, too, that business must be battled for a little harder this summer than in previous seasons; that the dealer who secures a heavy quota of sales will have to push hard to win success.

"Business is going along all right and we expect a good summer," said Mr. Boteler, "but we find that in order to do the same amount of business that we did last year, we have to trade more and to work harder. We are taking in more used cars than in seasons past and driving harder to keep up to our standards."

CLASSIFIED ADVERTISEMENTS IN THE AUTOMOTIVE DAILY NEWS BRING RESULTS

CHAPMAN CHEVROLET CO. IN LARGER BUILDING; USED CAR LOT OPENED

Grantwood, N. J., June 11.—The Chapman Chevrolet Company, one of the oldest Chevrolet dealerships in Bergen county, has moved into its modern new home on Anderson Avenue here, a block from its old location. The new building provides excellent show windows and is finished in modern colors to show off to better advantage the new 1930 models.

The Chapman service station is twice the size of the old one and is equipped with the latest machines and tools to handle all Chevrolet service jobs. The parts department has been enlarged and the new home contains a used car department also.

In addition the concern recently opened in Fort Lee a used car lot at one of the busiest intersections in the county—at Anderson Avenue and Route 10, where salesmen are on hand to explain and demonstrate the performance of the reconditioned cars.

The Chapman business expansion in the past two years has been so great as to make it compulsory to secure larger quarters.

J. J. COOLEY HONORED

NEW HAVEN, Conn., June 11.—J. J. Cooley, president of the Cooley Chevrolet Company, has been elected a director of the Congress Bank and Trust Company, one of the largest banks in New Haven.

FORT WORTH HAS TWO NEW FORD DEALERSHIPS

Fort Worth, Tex., June 11.—Two new Ford dealerships were announced here today—the D. V. Brooks Company and the Cooke-Melton Company, of which Bob Cooke and Frank Melton are the heads. Fort Worth now has five Ford dealerships.

Personal Briefs

Buffalo, June 11.—W. H. Clegg, former vice-president of the Nash Sales Company of Syracuse, has been appointed vice-president of the Nash-Buffalo Corporation. He succeeds George C. Lewis, who resigned to accept the management of a Brooklyn automotive concern.

Memphis, Tenn., June 11.—Lawrence Sibenaler is the new service manager for Parker-Hudson Essex Company, Monroe & Lauderdale, Hudson-Essex distributor here. Mr. Sibernaler has had fifteen years experience as a service man and seven as a traveler in the automobile field.

Stockton, Cal., June 11 (UTPS).—M. G. Snow has been appointed sales manager for Hart L. Weaver, Studebaker and Pierce-Arrow distributor in the central San Joaquin valley.

Chicago, June 11.—G. V. Orr, who has been prominently identified with Willys-Overland sales interests for the past eleven years, has assumed new duties in Los Angeles as vice-president of the Willys-Overland Pacific Company. He is succeeded here by C. W. Geiger as district sales manager for the metropolitan Chicago area, as well as the northern half of Illinois and eastern Iowa.

FORD SHOW UNDER TENT ATTRACTS HUGE CROWDS IN TOUR OF ARKANSAS

Fort Smith, Ark., June 11 (UTPS).—Crowds thronged the Plaza to view the exhibits in the Ford show, brought here under the auspices of Paul W. Sheridan, local Ford dealer. A huge tent housed the show, which included exhibits of the Ford car and its parts, and a sound moving picture operated to show the methods employed by the Ford Company in its manufacture of motor cars by mass production.

The show went from here to Fayetteville for a two-day stay. This show has headquarters at Kansas City. A complete line of cars was on display along with the show. A cut-away truck chassis interested the crowds.

NORTH SIDE CHEVROLET CO. SOLD TO MAGERS, WALKER

Fort Worth, Tex., June 11.—Cliff Magers and H. L. Walker announces they have purchased all outstanding interest in the North Side Chevrolet Company here. Since it was organized May 25, 1927, the company has sold 1,200 new and 1,500 used cars, works fourteen salesmen, nine mechanics and five clerks. Magers is president, Mrs. Louise Magers vice-president and Walker secretary.

New Haven Dealers Present United Front

The TRUTH About the USED CAR SITUATION

Never in the history of the industry have prices been so low on good Used Cars as they are at the present time. NOW is the time to buy! Past experience shows that prices always advance in the Spring and early Summer. Thousands of men and women are planning on buying a Used Car this year, and those who act now will be wisely taking advantage of the present low prices.

There Are Many Reasons Why You Should Buy A Used Car From A Reputable

The purchase of a used car today has become a matter of prime importance in the minds of hundreds of thousands of people.

In buying a used car there are several important questions you should ask yourself for your own safety and satisfaction.

If I buy this car, is the seller in a position to make good any defect that may develop? Is he prepared to give me service if the car causes trouble later on?

Has the firm I am dealing with a good reputation? Are they known at the local banks? Are they a firm that will stand behind the merchandise they sell? Can I be sure that the legal papers are properly made out and the title in my name?

Authorized NEW CAR DEALER

READ EACH ONE CAREFULLY!

1. The Authorized New Car Dealer will be in business in the same place tomorrow as he is today!
2. The Authorized New Car Dealer maintains a service organization and has a large investment in service equipment to properly condition and service the car you buy from him.
3. The Authorized New Car Dealer makes his profit by selling New Cars. He actually sells his Used Cars for less, thereby presenting a much greater dollar for dollar value.
4. The Authorized New Car Dealer must PROTECT his REPUTATION—To keep selling NEW CARS he MUST make friends of those who purchase his USED CARS.
5. In many cases cars that look good outwardly are never offered for sale by the Authorized New Car Dealer, because of some hidden defect detected only upon careful inspection. These cars are usually disposed of through some outside agency such as jobbing, but many times they later find their way back into retail channels.
6. The Authorized New Car Dealer offers a bigger and better selection to choose from. The majority of good USED CARS are those traded in toward NEW CARS.
7. The Authorized New Car Dealer offers you a finance plan in concerns of national reputations for fairness.
8. The Authorized New Car Dealer does not employ high pressure methods. His men have the interest of his business at heart.

One of The Following New Car Dealers Will Sell You a Better Used Car For Less

COOLEY CHEVROLET CO. Chevrolet 158 Whalley Ave. 'Phone 7-3900	KIRK'S GARAGE Marmon 219 Crown St. 'Phone 6-2181	STUTZ NEW HAVEN, INC. Stutz 203 Henry St. 'Phone 6-5435	
BIEVER MOTOR CAR CO. Chrysler—Plymouth 138 Whalley Ave. 'Phone 7-3673	FISH, FOSDICK & MILLS, INC. Oakland—Pontiac 206 Whalley Ave. 'Phone 2-7080	NEW HAVEN BUICK CO. Buick 320 Whalley Ave. 'Phone 3-1664	PACKARD SALES & SERVICE, INC. Packard 350 George St 'Phone 3-1442
BLUE RIBBON GARAGE of New Haven, Inc. Dodge—Plymouth 170 Whalley Ave. 'Phone 5-5135	H. GOLDMAN & SONS, INC. Studebaker—Erskine 105 Goffe St. 'Phone 3-5060	NEW HAVEN COUNTY MOTORS, INC. Graham Paige 202 Whalley Ave. 'Phone 6-2141	COWLES, TOLMAN & SONS, INC. Franklin 700 State St. 'Phone 3-1656
BROWN & THOMAS AUTO CO. Cadillac—LaSalle 264 Whalley Ave. 'Phone 6-5168	HOWARD COMPANY Viking—Oldsmobile 250 Boulevard 'Phone 3-7100	NEW HAVEN NASH CORP. Nash 388 Orchard St 'Phone 3-2100	GEO. B. WUESTEFELD CO. Pierce-Arrow—Willys Knight 180 Whalley Ave. 'Phone 7-8100

"BUY YOUR USED CAR from a NEW CAR DEALER"

By CHARLES B. BARR

The Dealers' Used Car Exchange in New Haven, Conn., having been disbanded, new car dealers found themselves without a means of presenting a united front on the used car situation. This problem was finally overcome when fifteen representative dealers got together on a full-page spread, run weekly for a month in one of the local newspapers. The page was arranged to appear as though it were a combination of editorial and advertising matter.

A large portion of the page was devoted to a boxed advertisement headed, "The Truth About the Used Car Situation," and citing "many reasons why you should buy a used car from a reputable, authorized new car dealer." Adjoining this ad was what purported to be a news story, under the heading, "Used Car Situation Brightest in Years." At the top of the page, set into the "news matter," was a genuine news picture, selected at random, to give the page an editorial aspect. Actually, of course, the entire page was paid for by the dealers. The stunt attracted considerable attention, according to several of the dealers represented in the ad.

DETROIT DEALERS REPORT INCREASE

Recent Price Cut by Ford Results in More Sales

Special from A. D. N. Detroit Bureau

DETROIT, June 11.—Ford and Chevrolet dealers in the Detroit district have been doing exceptionally well during the past week. Ford dealers report that the recent price drop in products of the Ford Motor Company has resulted in a great boost in business and which will continue for some time, according to orders for future deliveries at retail. This same condition seems to obtain throughout Michigan and cars are being shipped out in increasing numbers to Michigan dealers.

Despite reports frequently heard to the contrary, the Ford plant is going full tilt ahead on production and is turning out in the neighborhood of 9,000 cars a day.

Much interest is being displayed in the Ford junking plan. While nothing has been announced from the Ford interests along this line, reports are heard to the effect that a disassembly line is in operation and that approximately 400 cars a day are being disassembled and most of the parts junked every day. This, of course, cannot be varified, but is the talk going the rounds in this city. These cars, for the most part, come from Michigan dealers.

Rumors to the effect that this junking plan would be put into effect in Buffalo are heard frequently, but whether they are just rumors, or that the plan is going through, cannot be verified.

The Chevrolet plants in Detroit, Flint and Saginaw are going ahead at a rapid rate, and Chevrolet dealers in the Detroit district report excellent sales during the past week, with many orders for delivery during the next two weeks.

As far as Chevrolet is concerned the outlook is very bright for fine business throughout the summer months.

Chevrolet has a remarkable system of keeping in touch with conditions in every nook and corner of the United States. Regional and zone offices are so advantageously located that personal reports are received in the main offices in Detroit every week, so that officials know just what business conditions are from Seattle, Wash, to Portland, Me., every minute.

The parts division of Chevrolet also reports excellent business, which shows that interest in Chevrolet is at a high point.

DEALER DOINGS

Detroit, June 11.—The Lincoln Motor Company, a division of the Ford Motor Company, has taken over retail sales in this city, having acquired the Lincoln business of Peter J. Platte, at 3700 East Jefferson Ave. Mr. Platte, a leading automobile distributor here for many years, will devote his entire time to his Ford dealership at 14,801 East Jefferson Ave.

Tacoma, Wash., June 11.—Appointment of the South Side Motor Company, 5032 South Union Ave., as associate Oakland-Pontiac dealer for this territory has been announced by W. C. Johnston, president and general manager of the Commercial Motors, Inc., newly appointed Oakland-Pontiac dealer for Pierce county. Harry A. Esborg is manager of the new firm.

Hartford, Conn., June 11.—Russell P. Taber, Inc., Reo distributor in Connecticut and Hampden county in Massachusetts has been appointed distributor for the American Austin in Connecticut, western Massachusetts and the two southern counties in Vermont. This statement is given out by Earl M. Taber, president and general manager of the Taber organization.

Waterbury, Conn., June 11.—Wenzel & Collins, Inc., Graham-Paige dealer, has opened its new building at 14-16 Grove St. A complete service department is one of the features. Louis Wenzel and John J. Collins comprise the firm.

Refinements in Finishing of Cylindrical Bores

This paper treating with the evolution of cylinder bore finishing was presented Monday at the semi-yearly meeting of the American Society of Mechnical Engineers, in Detroit. The paper was prepared by J. W. Hindes and James G. Young of the Hutto Engineering Company, Detroit and is printed in part herewith.

THE problem of producing cylindrical bores held to ever-close limits of inaccuracy and finish has given industry no little concern. The bore produced must not only be round, straight and smooth, but also of even texture with full metal surface, as nearly as possible identical with a run-in bore. A thorough discussion of the finishing of cylindrical bores by means of the expanding grinder or honing method must necessarily make reference to other methods, which have been practical and the limitations of these methods.

Boring, reaming, burnishing, broaching, grinding, lapping, and the so-called honing method have been used with varying degrees of success.

LIMITATIONS OF BORING, REAMING, BURNISHING AND BROACHING

Boring, although indispensable for the fast removal of large amounts of stock has been practically discarded as a finishing operation where close limits are required. Although the use of tungsten-carbide cutting tools has made it possible to produce a much better finish on many boring operations than was formerly possible, the nature of the operation itself prevents its becoming a satisfactory finishing method.

The surface generated by boring is always a helical groove, varying in depth according to the overlap of the tool, the condition of the cutting edge, and the evenness of the metal. Such a surface has a series of ridges or crests, commonly termed fuzz, which shear off or wear down quickly, causing excessive initial wear.

The accuracy of the bore as to straightness and roundness is also dependent upon the accuracy of the piloting, the evenness of the metal, the condition of the tool, and the tool and the skill of the operator. Reaming is subject to a less degree to many of the limitations of boring. Out of roundness and taper are quite common and considerable difficulty is found in producing cylinders of uniform size.

Burnishing or rolling has been used quite widely on metals which lend themselves to cold working, and on these gives a smooth, hard surface. When used on cast iron, the fuzz is merely pressed into the wall and does not become an integral part of the surface. Bores are frequently out of round, especially when not having uniform external support over the entire length or circumference.

Walls of varying density are necessarily produced as the metal is not displaced, the irregularities being pressed into the walls. Broaching has found many applications where walls are heavy and uniformly supported. When properly fixtured, accuracy is not dependent upon the skill of the operator. As with other cutting tools, such as in boring and reaming, the uniformity as to size and finish is influenced by the wear of the tool.

Broaching has not proved satisfactory for finishing bores with thin walls, or those having varying support, such as cylinders with ports, cut away sections, or flanges. The metal being pushed out under high pressure, rigidity of material is essential. The limitations of the above methods of finishing cylindrical bores have led to the constantly increasing use of abrasives.

GRINDING PRACTICE

Engineers and others who have followed manufacturing methods over the last twenty-five years will have noticed the ever-widening scope of grinding. Confined at first mostly to the cutlery trades and to the comparatively few parts which required precision, its machining value was not understood nor its application to mass production appreciated. This, of course, was due very largely to the fact that in the early days of grinding artificial abrasives were unknown, and quarried stone and emery so limited the choice that to obtain a really suitable abrading agent for every operation was impossible.

The wide range of carefully graded wheels and stones now available and the data obtainable on speeds, feeds, etc., have changed practically all grinding operations from speculation to certainty. In addition to this, the value of grinding as an agent for removing stock has been realized, and, as the need for refinements and closer limits has been developed and demanded, machines have been evolved to meet the growth and perform increasing range of operations.

Maximum speed for production and accurate working to limits is now possible with suitable grinding equipment so that grinding is an essential factor in the manufacture of standardized duplicate parts. In the enormous field of mechanical industry it is being daily demonstrated that greater speed, closer accuracy and reductions in operating costs are made possible by introducing the most up-to-date grinding equipment, and this is possible and noticeable in every phase of manufacture. The manufacture of abrasives and grinding wheels, or the several factors affecting selection, would require a paper to itself, but this subject must be briefly dealt with in order to bring out the applications of grinding.

Grinding wheels, distinct from natural grit stones, are usually manufactured from two types of abrasives, an aluminous abrasive, with bauxite as a base, and silicon abrasive, with silica sand and coke as a base.

Importance of correct wheel selection needs no emphasis; it is all-important, an error in one or two grades in density or bond has an enormous bearing on production, sometimes the production is doubled by the difference of a grade or so in hardness of bond.

In studying cylindrical grinding it should be remembered that the close connection of previous operations, and often the grinding operation will correct imperfections, but careless use of this rule leads to excessive wheel costs, and where materials are hardened there is danger of surface cracks and local heating resulting in inferior products and often heavy increases in scrap percentages.

Some useful points to note for cylindrical grinding are, to be sure the speed is right, to tap new wheels, to be sure of soundness, never to force wheels on to spindles, and where lead bushes are used these should be a sliding fit on the spindles, and thin-rubber or thick-paper washers should be fitted between the wheel faces and flanges, the speed should always be watched as the wheels wear down, and it is better economy to change to right frit and grade of wheels as the changing time is very soon made up on quantity production.

Automatic feeding insures economy in wheel wear, allowing regular advancement of the wheel and thereby permitting it to act under normal effective conditions. Highly-skilled operators will, however, exercise great care in applying cuts by hand and are successful in preserving wheel wear. The strength of abrasive grains and bonds are effective only to the limit of their ability to withstand the shock forced upon them in grinding. By overloading or forcing, the grains become loose before actually serving their real purpose as a cutting medium and correctness of wheel face is lost.

Copious flow of lubricant is essential for precision grinding cylindrical work. This serves important functions of reducing heat generated by the work and wheel, also carries away the dust and reduces the friction of the cutting particles of the wheel.

Correct uses of steady rests are essential for many types of cylindrical grinding parts, care being taken that those are set right, the type of steady rests vary according to work being done, often hard-wood blocks suffice, and sometimes hardened steel shoes are necessary. Efficient steady rests insure production, accuracy, finish and ease in operating. Incorrect supporting of the work sets up chatter in the wheels, quite as much as incorrect work speeds.

Chatter is also caused by glazed wheels, and uneven thicknesses of driving belts, and wheels often glaze due to inattention to correct relation of the wheel and work speeds. Care must also be taken with the tapers for work centers, sometimes larger center holes will overcome chatter, but it is important always to be sure that the taper on the machine center corresponds positively with the tapers in work centers. When chatter takes place where every precaution has been taken to insure perfect machine conditions and wheels are dressed and balanced, then inefficient supporting of the work is invariably the cause.

FOR EXTERNAL WORK

Centerless grinding has made enormous strides in latter years, the principal elements are a grinding wheel, a feed wheel, and work rest; the advantage of this method is the continuous passage work pieces across the wheel, and elimination of centering and driving units. The work rotates at the speed of the feed wheel, this wheel is abrasive bonded with shellac or rubber, and has a coarse surface to prevent slipping.

The grinding wheel in cutting keeps the work firmly against the feed wheel, and traversing is controlled by the feed wheel being set at a slight angle, so that the centers of the feed and grinding wheels do not fall in the same plane, by slight change of this angle and change of speed of the feed wheel, traversing speeds are effected. A great advantage of centerless grinding is that smaller grinding allowance is possible over the ordinary cylinder grinder, owing to the centerless grinder working to nearest full diameter, whereas the center-driven machine works from a radius only. Owing to rigid support given the work, heavy cuts are possible and uniformly accurate work assured. The increase in production on many parts now centerless ground over the ordinary cylindrical grinder is several hundred per cent.

WHEEL GRINDING

Every one is more or less familiar with the operation and applications of the planetary tape grinder. It is widely used and has many advantages over boring, reaming, burnishing, or broaching. Bores can be held to size and free from appreciable taper, and a smooth finish obtained. Where the stock to be removed is not too great, it is frequently used to correct or produce the axis of the bore. Although it has been almost entirely replaced by honing in the finishing of internal-combustion engines, it is still the means of finishing many sizes and types of cylinder bores, which are not adapted to honing.

LIMITATIONS OF WHEEL GRINDING

There are, however, objections to ground bores. The finish produced by an abrasive wheel rotating at high speed and fed slowly through the bore is a helical groove, the pitch of which is the amount of wheel advance per rotation of the cylinder. The fuzz so generated is usually so minute that its shearing off on initial wear does not prove detrimental except in cases where a tight working fit is required. In such cases it is often followed by a honing or lapping operation.

The accuracy of this form of grinding is considerably dependent upon the skill of the operator and the condition of the machine. Due to the difficulty in protecting bearings from abrasive grit, it is extremely difficult to maintain spindle bearings in condition to avoid play resulting in out of round cylinders, where hard spots are encountered, and there is a tendency to chatter. Chatter marks may also be produced by blazed or unbalanced wheels. A further objection lies in the operating cost; a fairly high degree of skill being required for operation of the machine. This type of grinding does not lend itself to multiple operating as do boring, reaming, burnishing or honing, so that work on multiple bore blocks is relatively slow and correspondingly costly.

OBJECTIONS TO LAPPING

Lapping has been generally used to produce cylinder bores to the closest possible limits of inaccuracy and finish, but is always slow and costly, and to a great degree dependent upon the skill of the operator. It has the additional disadvantages attendant upon the use of a free abrasive. Great care must be used to prevent cylinder walls from becoming enlarged with the grit. Its best application is in lapping two parts together. Honing being the more satisfactory practice where parts of uniform size are to be produced independent of the piston or fitted parts. It also has the disadvantage of being extremely slow.

THE EXPANDING GRINDER, OR HONE

One of the most interesting refinements in the finishing of cylindrical bores has been the introduction of the expanding, floating grinder, or so-called hone. The type of tool generally used is in the nature of an expanding segmental wheel, the grinding surface being composed of a series of abrasive stones placed longitudinally upon the circumference of a metal body with an adjusting means for expanding the stones to the walls of the cylinder being ground and holding them under pressure against the wall, the tool itself being rotated and reciprocated simultaneously. A positive backing is given to the stones to prevent their contraction when meeting some resistance such as a high or hard spot in the bore, as spring tension tools would ride over the high spots and dig into low or soft spots. A little idea can be gained of the extent of the application of this method by noting the type of work for which it is used.

FIELD OF USE

At the present time the bores of nearly all internal-combustion engines are so finished, as are compressors of all sizes, in both household refrigerating units, large refrigerating plants and commercial compressors of various types. It is also widely used for finishing bushings, bearings, hydraulic cylinders, a variety of pumps, push rod guides, connecting rods, gear hobbs and bores, wrist pin holes in pistons, long tubes, pneumatic drills and hammers and air motors.

Although not yet the generally accepted method, it is finding a rapidly increasing use in finishing locomotive cylinders of numerous types, such as piston valves, air compressors, reverse gear cylinders, fire door closers, link-motion bushings, etc. Its use is not limited to cast iron, being used, as well, for grinding various steels, bronze, brass, aluminum, ebonite, stellite and numerous alloys.

CHIEF ADVANTAGES

The advantage of the expanding grinder or honing method is the ease with which close limits of accuracy are maintained, giving any desired finish at a high production rate, and at low cost. The accuracy of the work is not dependent upon the skill of the operator, and it lends itself readily to multiple operation. It has a wide range of application as regards size of cylinders finished. This method is being used for finishing the rifling of large guns as much as sixteen inches in diameter and sixty-five feet in length, seamless steel tubing three inches in diameter and twenty feet in length. Also push-rod guides one-half inch in diameter, cornet valves and slide trombones. It has proved especially applicable to the grinding of bearings having oil grooves, cylinders with keyways such as bores in gear hobbs, cylinders with ports, such as Diesel engine liners; rotary valves, sleeves for sleeve-type motors, two-cycle engines, large air compressors, slotted push-rod guides, etc.

FORM OF CONSTRUCTION

The successful finishing of such cylinders has been due to the type of construction, tools for such work having a minimum of six stones, so that as any one stone is passing over a keyway or port it is supported by the stones on either side of it, preventing its dropping into such depression. With this type of construction, tolerances of 0.0005 inch are easily maintained on most bores, and on many more bores tolerances of 0.0002 inch are held.

Another type of work for which this type of tool has been found peculiarly suited is for obtaining alignment between two bores such as the finishing of piston bosses, machine-tool bearings, headstock bearings (plain and seats for roller or ball bearings), piston-valve bushings, and printing-press bearings. This result is obtained by the use of a single grinder with a set of stones at either end or by two independent grinders rigidly connected and used for grinding two cylinders of either the same or different sizes.

COMPENSATION FOR UNEVEN STONE WEAR

In order to obtain cylinders both straight and round, some means must be provided for taking care of uneven stone wear, as it is evident that even though the abrasive be absolutely uniform and the stock to be removed by evenly distributed (either of which conditions seldom obtains) in the grinding of long bores the end of the stone in the direction of travel is worn down the more, and this is compensated for by use of floating cones, which feed out the stone keeping the grinding faces parallel. Accurate work with this type of tool has often been obtained when one end of each stone has been worn $\frac{1}{16}$ in. more than the other.

In the operation of this type of tool it is necessary to reciprocate the head while rotating, a ratio of reciprocating to rotating speed of roughly one to three having been found most suitable for cast iron, the actual surface feet per minute being from 65 to 70 reciprocation to 200 feet per minute rotation. The purpose of combining these motions are, first, it gives greater cutting speed, the action of the stick being in a number of respects similar to the action of a file, in that by rotating the grinder only the stones will load with metal and glaze. The same would be more or less true of reciprocation only as would be the case if a file were pushed straight across the work, either sidewise or lengthwise. By combining these motions, a sheering action takes place, producing faster and easier cutting and at the same time cleaning the face of the stone and preventing its glazing.

It has been quite consistently noted that, if a stone is a little hard for the work and starts to glaze, it can be made to break down and cut freely by increasing the ratio of reciprocating to rotating speed. This, of course, within certain limits, applying only to stones ordinarily suited for the particular type of work, and not making it possible to apply stones a number of degrees harder to the job.

The combined rotating and traversing motion not only cleans the face of the stone, but causes it to break down more evenly, giving a more uniform grinding surface and a closer average of errors in both material and abrasive.

COOLANT

In the grinding of cast iron it is practically universal practice to use kerosene as a coolant during the grinding operation, which also serves as a lubricant, causing the ready displacement of all broken-down abrasive particles on the face of the stone, giving a much freer cutting surface. The kerosene also serves to clean the surface being ground, washing it clear of free particles of both metal and abrasive.

Kerosene is also quite generally used on other metals due to cost and the fact that it operates quite satisfactorily, although turpentine has been found to give a freer cutting action on bronze, brass and some alloys.

Mineral seal oil can be used on most operations, but is more expensive to use.

In this type of grinding the use of water has been entirely unsatisfactory, not so much on account of its causing tools, machines and work to rust, but because it causes the broken-down particles of abrasive and metal to adhere to the face of the stone, forming a rather gummy mass. Stones soaked with water before using with kerosene also show this tendency, as do stones which have been immersed in motor or cutting oils. Oil has not been found a satisfactory lubricant and coolant in itself, although recent tests indicate that a small percentage of spindle oil in the kerosene does not interfere with its action. Much experimentation has been made along the line of developing proper coolants, but so far kerosene has proved the most satisfactory.

ABRASIVE

For use on cast iron, 80, 120 and 150 grit abrasives have found widest use for roughing operations, and 120 and 180 grit stones for finishing. The stone used for finishing depending on the surface desired. In all cylinders finished with 180 grit stones or coarser, criss-cross scratches are plainly visible, the rotating and reciprocating motion creating diamond-shaped figures throughout the bore. These scratches are not measurable in depth, being so slight that a few passes of a close-fitting piston removes at least 50 per cent. of them. Where turned rings are used these scratches are essential to proper seating of rings, as is the case with most internal-combustion engines.

By the use of the finer abrasive stones (600 grit or finer) a mirror finish can be obtained, no scratches at all being visible to the naked eye. Such finishes can only be used to advantage in engines using ground rings, or in hydraulic and compresser cylinders and the like where no seating of rings is required. In the grinding of bronze, brass, aluminum and aluminum alloys, fine grit stones of a small percentage of bond have proved most practical, as a stone which is too porous or one having grit too closely held will have a tendency to tear and roll up the metal. In grinding such metals a copious flow of coolant is required, and where metal is particularly soft the application of paraffin wax to the face of the stone prevents loading and gives an improved finish.

One of the most interesting applications on this type of work has been the finishing on a production basis of seamless steel tubes as much as 20 ft. in length. Due to the presence of scale on the wall, abrasive stones have not proved economical for the roughing operation on such tubes, and shaving tools known to the trade as "REVOCIPERS" have been produced. These are tool-steel inserts which fit the grinder heads replacing the abrasive sticks, and are operated by the same rotating and traversing motion as the grinder.

Each insert is made up of a series of cutting teeth with space between them for chip clearance, and so ground as to give a continuous cutting action in both directions of the stroking cycle. The interior finish of the tube, therefore, has the same

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Cutting Tests With Cemented Tungsten Carbide Tools

This paper which was presented at the Monday sessions of the semi-yearly meeting of the American Society of Mechanical Engineers in Detroit by T. G. Digges, associate metalurgist of the United States Bureau of Standards, treats of tests made by the bureau of the cutting qualities and life of tungsten carbide as a cutting material. The paper is presented in part herewith.

Cemented tungsten-carbide tools were first placed on the market on a commercial basis in Europe in 1926 and in the United States several years later. The rapid development of this material during the last year has made possible its extensive use for tools throughout this country and abroad. The records of production with these tools have already shown that this new cutting material will occupy a most important place in our industrial life.

The experiments described in this report relate primarily to a study of lathe-tool performance as affected by the conditions of cutting, such as variations in speeds, feeds and depths, while the composition, the size and the form of the tools and cutting materials were not varied. The investigation was for the purpose of developing a method of testing tungsten-carbide tools under heavy duty and to establish some of the laws of cutting which define the approximate relations between tests of short duration, which might be made in the laboratory, and long-time cutting required in practical service. The need of such information is shown by the large number of inquiries received by the Bureau of Standards from consumers.

METHODS OF TESTS—EQUIPMENT

A 36-inch heavy-duty engine lathe, driven by a 40 horse power 220-volt d. c. shunt motor, was selected. A link belt chain was used to insure a positive drive. Accurate speed control of the work piece was secured by using the several gearing ratios of the lathe and by changing the speed of the motor with a variable resistance in the field circuit. Experiments showed that it was necessary to increase the rate of speed of the motor in order to prevent excessive slowing down or stalling under heavy loads.

A special tool holder was designed to give ample support to the test tool near the cutting edge. This was firmly clamped in the four-bolt tool-post holder.

A "live center" (tailstock) containing a ball bearing was used instead.

A single-pointed cutting tool was selected, and its form was similar to that commonly employed for heavy-duty roughing work. Its form and dimensions, consisted of tungsten-carbide tips approximately 0.18 inches thick, 0.31 inches wide, and 0.87 inches long, copper-brazed on a shank 0.5 inches wide, 1 inch thick, and 7 inches long. The tools had a plane angle of 90 degrees, and were ground to 6 degrees front and side clearance, 0 degrees back slope, 14 degrees side slope, 10 degrees back side relief, and the radius of the nose was 0.0625 inches. The edge of the tool from this arc along its cutting edge was ground to a contour of 1.75 inch radius for 0.4375 inch. All tools were hollow ground to a depth of 0.003 to 0.006 inch at approximately 0.25 inch from the cutting edge of the tools. Special grinding wheels of silicon carbide were used for grinding the tools.

The tools used in this investigation were manufactured by the Carboloy Company, Inc., by certain sintering operations in which the fine particles of tungsten carbide were cemented firmly together with cobalt, and the material is referred to as cemeted tungsten carbide to differentiate it from the cast product. Chemical analyses were made on the two lots of tungsten-steel tools that were supplied at different times and all tools were found to be quite uniform.

PROCEDURE

From five to eight tools were tested for the most of the conditions investigated and all tests were made in sequence. For example, in the study of the effect of feed on tool performance, one tool was tested at each of the selected feeds in the series, a second tool was tested at each of the same feed, and this procedure was continued until the desired number of tools had been tested for each condition. From one to three tests were made with each tool, but no tool after being reground was used under the same conditions of test as those under which it had formerly been tested. Only average values were used for comparison in the report.

Testing tools in sequence has long been practiced and tends to minimize variations in results arising from inhomogeneities in the metal being cut. The pieces from which cuts were taken were originally 10 to 12 inches in diameter and from 8 to 10 feet long. In some cases these forgings were cut to diameters as small as 4.5 inches in the cutting tests. Average mechanical properties were determined in longitudinal specimens cut from the forgings so as to represent the average metal removed during the cutting.

In making cutting tests the tool was clamped so that the side was at right angles to the longitudinal axis of the forging, with the end of the nose on the dead center. The lathe was then set at the desired feed and the tool at the required depth and the speed of the lathe adjusted to give the forging the desired peripheral speed. The tool was fed by hand until the desired cut was reached, after which the automatic feed was thrown in and the time recorded. The speed of the forging decreased when the cutting began, but was quickly adjusted to bring it back to its original value. Before starting any tests care was taken to remove any glaze surface caused by the break down of the previous tools or any part of tool that might become embedded in the forging. All tests were run dry, and cuttting the speed, feed and depth of cut were varied, depending upon the purpose of each series of tests.

TOOL FAILURE

A groove was formed on the top surface of the tool near the "leading edge" soon after the tool started to cut. This depression became greater as the test progressed until a condition was finally reached when the wear was sufficient to cause a small section to chip or break out of the working portion of the tool. This "end point" usually resulted in a glazed surface on the test forging and was often accompanied by a splitting of the chip, which gave an additional indication of tool failure. Thus there was a very definite end point and one that could be recognized without much difficulty. In some of the experiments, especially those of the most severe conditions of cutting, this end point was often quickly followed by, if not simultaneous with, tool breakage, which would leave doubt as to the time of tool failure. Some doubtful tests were discarded in these experiments. In some cases it would have been possible to continue to cut after the described condition was reached, but only at the expense of badly broken tools. All cutting results given in this report were obtained by the "end-point" method described.

The appearance of the forging at the time of failure of the tungsten-carbide tools was very similar to the appearance of a forging when a high-speed-steel tool fails under the so-called "lathe breakdown test." A glazed surface was produced on the forging at the bottom of the cut at the time of tool failure.

EFFECTS OF CUTTING SPEED ON TOOL LIFE

It is a well-known fact that the cutting speed of a high-speed-steel lathe tool is dependent upon the quality, composition and heat treatment of the tool and on the properties of the metal cut, as well as upon the size and form of tool, feed and depth of cut. It appeared reasonable to assume that the cutting speed of cemented-tungsten-carbide lathe tools should depend upon approximately the same variables as high-speed-steel tools, and it was upon this basis that the experiments were performed.

SUMMARY AND CONCLUSIONS

1. The primary object of this investigation was to develop a method of testing tungsten-carbide lathe tools under heavy duty and to extend to the new cutting material some of the empirical laws originally developed by Taylor and his associates for rough turning with carbon and high-speed steel tools.

2. The so-called lathe breakdown test for high-speed steels was found applicable for testing cemented-tungsten-carbide tools under heavy duty.

3. The characteristics of the cutting-speed-tool-life curves for tungsten-carbide tools were similar to those of high-speed-steel tools.

4. In dry rough turning 3.5 per cent. nickel steel of about 105,000 lb. per sq. in. tensile strength, with a constant feed, depth of cut, tool size, and form, the relation between cutting speed and tool life within the life range of 9 to 156 min. may be represented by the empirical equation

$$VT^n = c$$

where V = the cutting speed in feet per minute.
T = the tool life in minutes.
n = constant = 1/8.
c = constant which is dependent upon the conditions of cutting. It will vary with the form and size of tools, materials cut, feed, and depth of cut.

5. For a given area of cut, higher cutting speeds are obtained with deep cuts and fine feeds (within limits) than with shallow cuts and coarse feeds.

6. The relation between cutting speed, feed, and depth of cut in terms of the experimental conditions may be represented by the empirical equation

$$VF^{0.75}D^{0.75} = K = 12$$

in which V = the cutting speed for a selected tool life.
F = feed in inches per revolution.
D = depth of cut in inches.
K = constant = 12 for the experimental conditions.

7. Higher cutting speeds are obtained with cemented tungsten carbide tools under certain conditions of cutting than with high speed steel tools.

8. Cemented tungsten carbide tools are brittle, but when properly supported will produce excellent results under certain cutting conditions.

9. High cutting speeds with relatively fine cuts are more favorable to the successful application of tungsten carbide tools than heavy cuts at slower speeds.

10. Machines capable of operating at high speeds with powerful driving units are necessary to utilize the full cutting capacity of cemented tungsten carbide tools.

USE OF WOOD IN CAR BODIES DISCUSSED

(Continued from Page 1)

water contained in every 1,000 feet of air-dried lumber, was comparatively enormous. The problem of eliminating this expense created a number of plants in the South, where this lumber is kiln-dried and cut to size in the heart of the lumber supply.

"The experiment revealed the advantages of other methods of economy, as the new method proved that a lower grade of lumber could be used and also the cut lumber saved considerable storage space.

"The success of this plan in cutting costs has proved to be a great boon to the South by giving employment to thousands."

Groups of engineers visited the plants this afternoon. Tomorrow morning, Crosby Field, vice-president of the Brillo Manufacturing Company, Springfield, Mass., will discuss recent advances in aircraft engineering.

OVERLAND OFFERS LOWEST PRICED WILLYS-KNIGHT 6

(Continued from Page 2)

mium plated radiator shell. Pump circulation, thermostatic control. Centrifugal type pump, in unit with fan. Four-blade fan, driven by V-type belt, adjustable. Heat indicator on instrument panel.

Fuel System — Thirteen-gallon gasoline tank; vacuum fuel system; electric gasoline gauge, Tillotson pumpwell, vertical type carburetor on left side of engine; intake manifold with manual heat control.

Ignition and Lighting—Auto-Lite with semi-automatic spark control; ignition lock; Auto-Lite distributor mounted on right side of engine; firing order, 1-5-3-6-2-4; battery, U. S. L. 6-8 volt, 13 plate, 127 amp. hours; starting motor, Auto-Lite, swinging brush type; acts on flywheel through Bendix drive pinion; generator, Auto-Lite, swinging brush type; head lamps, conical type chromium-plated rims, Twi-lite lens, 10⅛-inches diameter; bulbs, 6-8 volts, two filament 21-21 candle power, double contact; tilt beam; parking lights, 6-8 volt, 3 candle power, single contact; combination tail and stop light, 6-8 volt, double filament, 2-21 candle power, double contact; dash lights, indirect 6-8 volt, 3 candle power, single contact.

Controls—Improved finger tip control, starting motor, lights and horn control at center of steering wheel. Spark, throttle, choke and heat control on instrument panel; ignition lock on instrument panel.

Equipment—Hydraulic shock eliminators, front and rear, mono-control windshield on enclosed cars; dome light in coach and sedan; air cleaner; gasoline filter.

Refinements in Finishing Of Cylindrical Bores

(Continued from Page 10)

characteristics as the ground tubes, i. e., criss-cross tool marks, these requiring from .0015 to 0.002 in. grinding to clean up. In actual production a stock removal of 0.007 in. per ft. per min. has been maintained on 3 in. seamless-steel tubing. The value of this type of tool is not, of course, in rate of stock removal, but rather in its adaptability to finishing of tubes of lengths limited only by driving mechanism.

The success of this method of finishing can be considerably accounted for by its use for gang grinding, 4, 6 and 8 spindles being frequently used simultaneously, for use either on motor blocks or multiple grinding of sleeves or bushings held in fixtures.

In the automotive industry it is common practice to leave from 0.003 to 0.005 in. after reaming to be removed by grinding. Actual finishing time varies from thirty seconds to two minutes per block, according to the nature of the block, quality of reaming operation, power of machine and type of abrasive used. In grinding airplane cylinders and thin-walled cylinders, generally nine or more stones are used in the grinder to prevent breathing of cylinder or distortion of the thin walls through holding. Another element entering into the success is the fact that the accuracy of the work is not dependent upon the skill of the operator.

CONCLUSION

The advantages of the expanding grinder or honing method of finishing cylindrical bores are: (1) Perfection of finish, both as to straightness and roundness; (2) absence of fuzz, leaving a full metal surface as nearly as possible identical with run in bore; (3) uniform density of surface maintained; (4) adaptability to gang grinding, with resulting high-speed production and low cost.

19 CARS ENTERED FOR ALTOONA RACE

Altoona, Pa., June 11.—Nineteen race jockeys, comprising the pick of the Indianapolis field, will battle for positions in Saturday's 200-mile national championship automobile classic, starting Wednesday. The entry list closed at midnight Saturday.

The following is the official entry list, with the names of the drivers, mechanics and cars:

Billy Arnold, Spider Matlock, Miller-Hartz Special; Shorty Cantlon, Ernie Olson, Miller Schofield Special; Lou Schneider, Clyde Terry, Bowes Seal Fast Special; Deacon Litz, mechanic unnamed, Duesenberg; Babe Stapp, Cotton Henning, Duesenberg; Chester Gardner, S. T. Donaldson, Buckeye Special; Speed Gardner, C. E. Ricketts, Miller Front-Drive Special; Jimmy Gleason, R. W. Painter, Waverly Oil Special; unnamed, Danny Hogan, Bethlin Miller Special; Wilbur Shaw, Floyd Smith, Empire State Special; Russ Snowberger, Paul Rice, Russell Eight Special; Lou Moore, Fred Bleuvett, Mavy Special; Mel Kenealy, Jerry Houck, Mavy Special; Fred Lecklider, Johnny Smithson, Mavo Special; C. C. McKenzie, mechanic unnamed, Ambler Special; Ernie Triplett, mechanic unnamed, Culberson Special; Zeke Meyer, C. Grover, Miller Special; Marion Trexler, mechanic unnamed, Trexler Special; Chet Miller, mechanic unnamed, Reed Fronty Special.

FRENCH ENGINEERS VISIT U. S. RUBBER TIRE PLANT

Detroit, June 11.—The manufacture of tires was given an intensive study here recently when twenty-six French automotive engineers, in America to compare our efficiency with that of France, visited the tire plant of the United States Rubber Company. B. J. Lemon, field engineer of the United States tire department and a past president of the Society of Automotive Engineers, acted as nost to the group during its stay at the tire plant.

Plant Extension

Lockport, N. Y., June 11.—The Simonds Saw and Steel Company has awarded a contract to the firm of Morris & Allen, Inc., Buffalo, for the erection of a one-story brick and steel addition to its local plant. The new unit, to be ready for occupancy early in September, will be 75 by 100 feet in size, cost $500,000 with machinery and equipment installations, and house equipment for cold rolling steel and the production of stainless steel.

Erie, Pa., June 11.—The Metric Metal Works, a unit of the American Meter Company, manufacturer of gasoline measuring devices, has awarded a contract to the Henry Shenk Company for the erection of a three-story concrete and steel addition to its plant at Tenth and Payne Streets to cost $25,000, exclusive of machinery and equipment installations.

Rochester, N. Y., June 11.—Work is underway on a new bulk distributing plant at Brooks Avenue and Genesee Park Boulevard for the Gulf Refining Company, to cost $500,000, with machinery and equipment installations. It is expected to open the new plant early in August. The new unit includes a warehouse, 60 by 100 feet in size; a 16-car garage, loading shed, pump house, five 10,000-barrel storage tanks and five 50,000-barrel tanks. In addition, pipelines have been constructed to care for water shipments of products over the Barge Canal.

Detroit, June 11.—The Doty Manufacturing Company has recently been incorporated to manufacture Catalin parts for the automotive field principally. Catalin is a synthetic resin, used extensively on the interior hardware of several automobiles. It is also being adopted in the aircraft field, as well as many diversified lines. The new plant is located at 1311 Terminal Ave., Detroit. M. F. Doty, president, has been identified with the industry about twenty years and is well informed as to automobile requirements. F. B. Marble is treasurer.

Kenosha, Wis., June 11.—The Snap-On Tool Company of Milwaukee was opened June 2, when the Chamber of Commerce staged a house warming party at its new plant here. The company is dismantling its factory in Milwaukee, with machines being transferred to Kenosha to be ready for production within thirty days.

Congress to Fix Car Operation Cost Per Mile

Special from A. D. N. Washington Bureau

WASHINGTON, June 11.—The cost per mile for the operation of an automobile is to be fixed by Congress.

The House Committee on Expenditures and the House Committee on Appropriations have favorably reported the Wood bill, prescribing a uniform governmental allowance of 7 cents a mile for automobiles, privately owned, when used for official purposes.

The bill is approximately in line with costs compiled by large industrial corporations. It also compares favorably with the cost per mile study made by Iowa State College, showing an average of 6.43 cents, computed from average costs of 800 automobiles operated 11,000 miles each.

OIL COMPANIES REVISE GAS PRICE DISCOUNTS

Chicago, June 11.—Revised gasoline price discounts designated to aid smaller tank wagon distributors in this city have just been made by leading oil companies headed by Standard Oil Company of Indiana. The adjustment now allows the smaller accounts the same discounts that were previously given only the larger customers. No formal announcement accompanied the new revised scale on the part of those putting it into effect, but the distributors have been notified and are now operating under it. The adjustment applies to the metropolitan Chicago district only. The discounts follow:—

For tank wagon purchases of more than 500 gallons a month a discount of 4 cents a gallon from service station price; for purchases of more than 1,000 gallons a month, a discount of 5 cents from service station price.

7 REASONS

Why You Can Make Big Money Selling CURTISS-WRIGHT Planes

If you want to get in on the ground floor of an industry that is growing by leaps and bounds, if you want to represent the largest and best advertised firm in that industry, if you want to make the profits from a market as broad as the heavens above, if you want to forget trade-ins and the other problems that cut profits to the bone—*read these facts!*

IN EVERY PART OF AMERICA, enterprising dealers are alive to the new era in selling transportation. They are becoming Curtiss-Wright dealers because they realize the golden opportunity aviation presents. Now Curtiss-Wright invites you to share in the profits which will surely be made in this fast-growing field.

A Real Sales Franchise

Manufacturing four great makes of aircraft—Travel Air, Curtiss-Robertson, Moth and Keystone-Loening planes—two world-renowned makes of aircraft engines, Curtiss and Wright, and sponsoring many other allied products and services, Curtiss-Wright is the largest aviation group in the world.

Curtiss-Wright is strongly financed and adequately manned. A large percentage of all the commercial planes in service have been made and sold by the companies now comprising Curtiss-Wright. Their products—from the small 2-place sport plane to the 20-passenger air liner—are right from an engineering and manufacturing standpoint, and the kind of planes an air-minded public demands. Thus, when you represent Curtiss-Wright in your locality you may be sure that its success and your success is certain.

Advertising Makes Money For You!

As a Curtiss-Wright dealer you will enjoy the benefits of the greatest advertising campaign ever launched by an aircraft manufacturer. Curtiss-Wright advertisements, appearing in sixteen leading national magazines, and in all the important aeronautical journals, are reaching nearly 30,000,000 in every part of the country. In addition, every worthwhile prospect will be reached by a nation-wide direct mail advertising campaign. This tremendous promotion campaign will surely create many class "A" prospects—make sales and profits for you!

Territories of Large Area

Just as the airplane radically revises old standards of time, speed and distance, so, too, does the aircraft business change all previous ideas of sales territories. Because you are able, via air travel, to cover a wider area, you will be able to conduct sales in a territory many times larger than those usually allotted in other lines of business. This means more prospects for you to contact—more sales, greater profits!

Here They Are:-

1. You represent the largest aircraft manufacturer.
2. Your products are advertised in leading magazines.
3. You handle large territories and many prospects.
4. You sell a complete line in a broad price range.
5. You sell high-price units, get large commissions.
6. Your sales are *clean*—commissions all profit.
7. Selling on deferred payments, you serve large market.

A Broad Range of Prices

The Curtiss-Wright line is complete. It has been designed to appeal to every class of prospect—the private, industrial and commercial airplane operator. There's a 3-place sport biplane selling as low as $2,195, a 3-place cabin job selling as low as $2,495—but little more than the price of a fine roadster or coupe. And there's a 6-place cabin monoplane at $13,500, a 4-place amphibian at $16,800, a twin-motored 8-place job at $24,900, and an 8-place amphibian at $29,700. In the Curtiss-Wright line are planes of every size and kind—a type for every need and purse.

Many Profit Opportunities

Because the prices of planes are higher than those of other kinds of transport vehicles, the profit per sale is unusually large. And airplane sales *are clean*—there's seldom a trade-in to cut down your commissions. For these reasons, and because the Curtiss-Wright dealer territories contain greater numbers of prospects, the merchants make larger profits.

And there are many other ways to make money in the aviation business. By special arrangement, authorized dealers will profit from the service and repair work they turn over to the Curtiss-Wright Flying Service. This obviates the necessity of installing service equipment and employing mechanicians for such work. Other opportunities for profit are presented in the sale of aviation accessories and equipment, flying instruction, transport line tickets, and taxi, charter, sightseeing and photographic flights, etc.

Deferred Payment Plan Boosts Sales

Through the Aviation Credit Corporation, the Curtiss-Wright dealer may stock and sell planes on liberal terms. The wholesale financing plan makes it possible to display planes on your sales floor at very low cost. This enables you to devote the major portion of your investment to the promotion of your sales and profits. It is not even necessary to stock demonstrators. By special arrangement the Curtiss-Wright Flying Service will handle demonstration flights at a nominal cost.

The retailing financing plan greatly enlarges the opportunity for sales. It is now possible to sell a plane for as little as $750 down, and the carrying and insurance charges are surprisingly low. This new development puts a tremendous lever in your hands for developing sales. Because it makes it easy for the public to buy, the Curtiss-Wright deferred payment plan is boosting sales amazingly.

Investigate This Opportunity

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